

Manufacturers Record

Industry Construction



\$6.50 per Year.
Single Copy, 20 Cents.

Baltimore, Md.
AUGUST 14, 1930

Encouraging Business News

In the midst of depressing reports on the effect of record dry weather throughout most of the country, and the dearth of business in many lines, there are encouraging signs which offer a more hopeful outlook.

Last week the Manufacturers Record called attention to the new high record for six months set by the sale of Southern public improvement bonds, which showed a 40 per cent gain over the first six months of 1929. This is certain to be reflected in increased construction activity throughout the South and in the quickening of general business. The \$103,549,000 of construction contracts awarded in the South during July are the third highest recorded, 60 per cent higher than awards in July, 1929, while the total for the first seven months of this year is within \$138,000,000 of the aggregate value of all construction awards in the South during the entire 12 months of 1929.

What a contrast is offered by the foregoing to the situation confronting the country during the deflation period of 1921! At that time construction fell off to almost nothing. The iron and steel industry was running only 15 to 20 per cent capacity. Hundreds of manufacturing plants were idle. Farmers were bankrupt through deflated land values and low prices, which practically swept away \$25,000,000,000 of capital value in a few months; and stores and warehouses were stocked with goods produced at peak, wartime prices.

Today finds the iron and steel industry operating at an average rate of over 73 per cent for the seven months ending July, 1930. Department store sales are but 10 per cent below the peak of 1929. Many individual industries are reporting sales ahead of last year. Insurance sales are ahead of the record established in 1929. Savings deposits increased \$700,000,000 against last year's drop of \$82,000,000. Production is better balanced to demand. Industry has been housecleaning in preparation for greater efficiency of operation. Debt liquidation has made remarkable progress in spite of dull business, and an important feature is that farmers have been paying off their obligations. Increased savings deposits inevitably will be reflected in greater industrial activity. Many concerns which have been shut down for "vacation and stock-taking time" are resuming operations.

In manufacturing plants, the slow-down in production activities is being utilized for repairing and overhauling, for modernizing equipment and for plant expansions. The ground is being prepared for full, efficient production as demand increases.

The Manufacturers Record believes that a substantial business revival impends. A quickening in business activity should take place during the next few months, as it did in the latter part of 1921, for the needs of 122,000,000 people cannot long be left unfilled.

CEMENTILE

YOU PAY BUT ONCE WHEN YOU ROOF WITH CEMENTILE

You can figure the first cost of a Cementile roof as final . . . because Cementile is placed on your buildings once, to stay—and to forget. No repairs, no painting, no costly upkeep of any kind, nothing to pay after the price of the original installation. And Cementile are so easily and so speedily laid (directly on the purlins) that installation is also inexpensive. Fireproof and waterproof, Cementile is the most enduring roof possible to use. Twenty year old Cementile roofs are not uncommon. Three styles are available—Red Interlocking, and Flat and Channel where composition covering is desired. Write for a catalog.

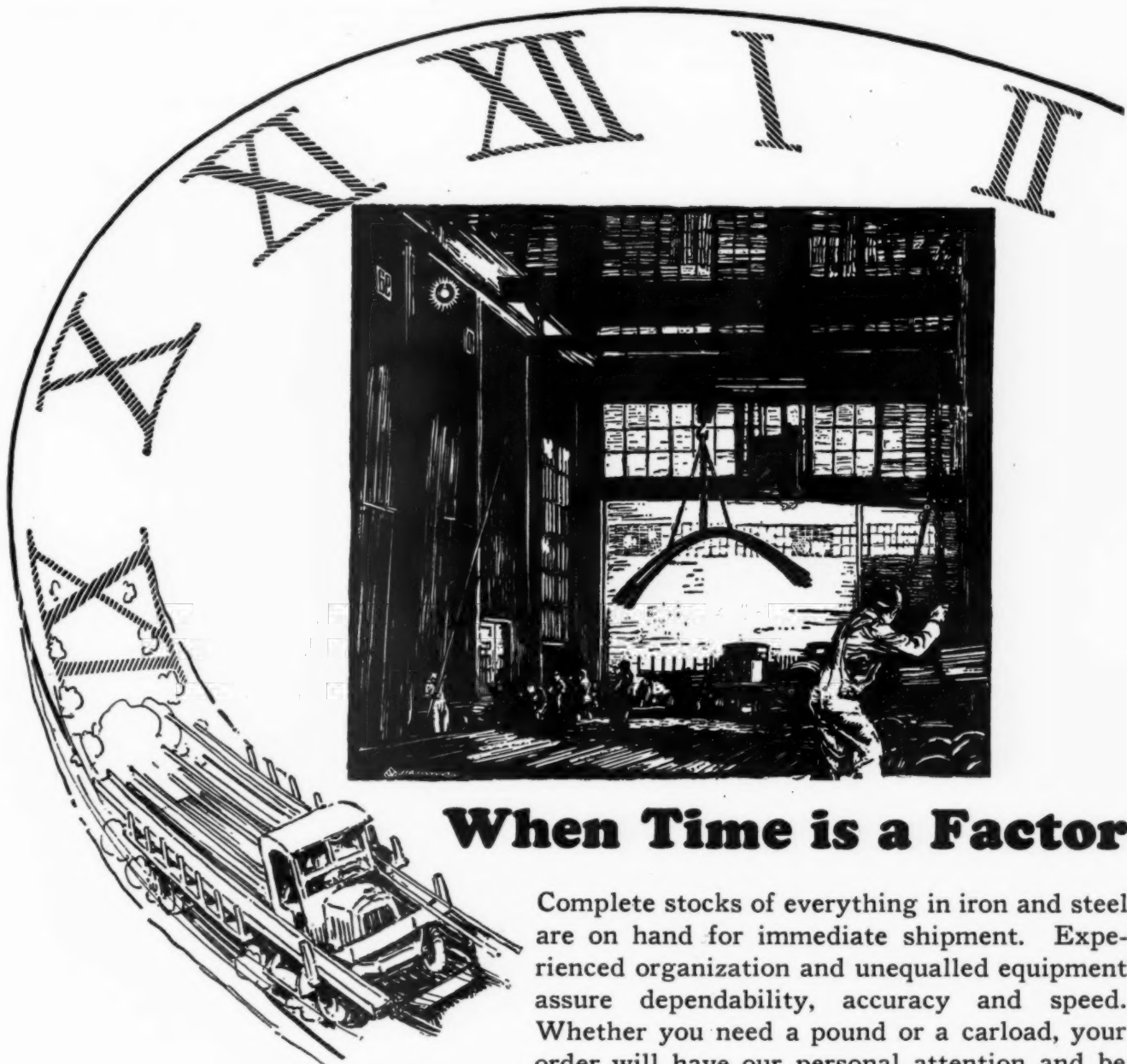
AMERICAN CEMENT TILE MANUFACTURING COMPANY

804 Oliver Building, Pittsburgh, Pa.

Plants: Wampum, Pa.; Lincoln, N. J.; Birmingham, Ala.

Offices: Pittsburgh, New York, Boston, Philadelphia, Atlanta, Birmingham.

Crawford Auto Shop, Inc.,
Birmingham, Ala.
William Lesley Welton, Architect
20,700 sq. ft. Flat Cementile



When Time is a Factor

Complete stocks of everything in iron and steel are on hand for immediate shipment. Experienced organization and unequalled equipment assure dependability, accuracy and speed. Whether you need a pound or a carload, your order will have our personal attention and be shipped at once.

A few of the thousand and one steel products always in stock:

Bars	Sheets, Full Finished	Strip Steel	Forging Bars	Allegheny Metal
Structurals	Refined Iron	Boiler Tubes and	Babbitt Metal	Concrete Reinforcing
Rails	Turned, Ground and	Fittings	Billets	Firmtread Plates
Plates	Polished Shafting	Rivets and Bolts	Tool Steel	Small Tools
Sheets, Blk. & Galv.	Screw Stock	Welding Rod	Alloy Steel	Machinery, etc.

Write for the Journal and Stock List—"Key to Immediate Steel."

JOSEPH T. RYERSON & SON INC.

Plants: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City

Representation in: Minneapolis, Rockford, Kansas City, Tulsa, Houston, Dallas, Newark, New York, Denver, Los Angeles, San Francisco

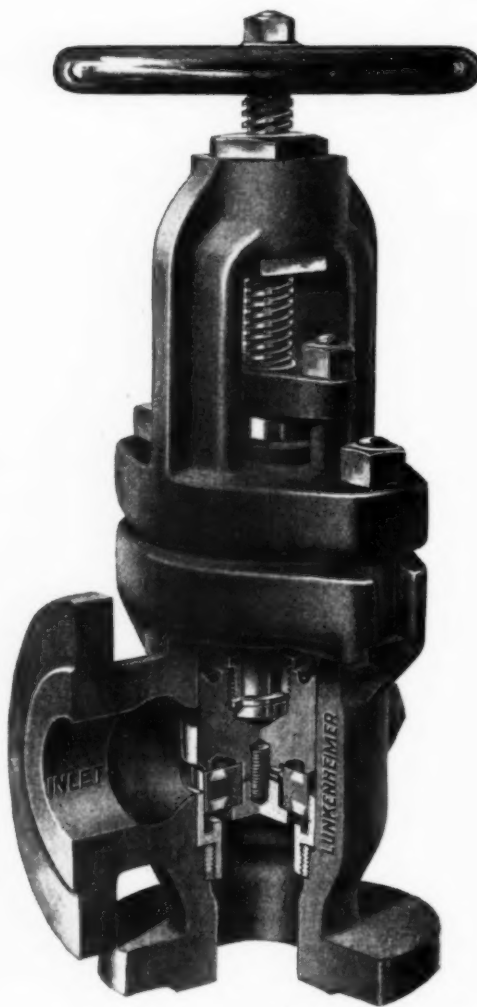
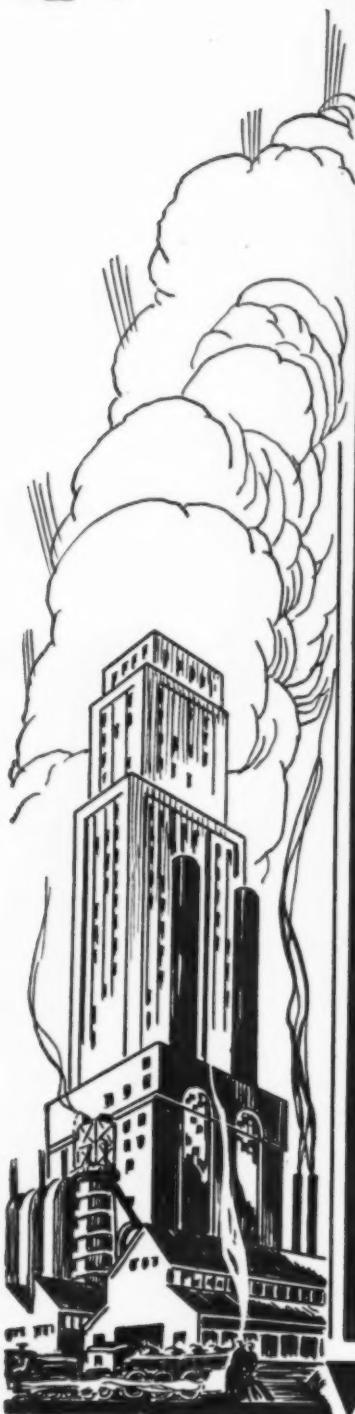
RYERSON

STEEL - SERVICE

FOR BETTER SERVICE



in
General Industry



LUNKENHEIMER "DURO" BLOW-OFF VALVES

outstanding in design and of exceptionally sturdy construction, are effective aids in the elimination of power losses through blow-off lines.

Positive seat tightness, automatic cleansing seating faces, reversible, repairable disc and bronze bushings throughout insuring easy operation,—are qualities which provide in the "Duro" a practically permanent installation, free from expensive leakage and frequent repairs.

Folder F. 515 which illustrates and describes the Lunkenheim "Duro" Blow-off Valves, tells an interesting story of how blow-off losses can be avoided. Write for a copy.

Lunkenheim distributors are located in all industrial centers.

THE LUNKENHEIMER CO.

"QUALITY"

CINCINNATI, OHIO, U.S.A.

NEW YORK CHICAGO BOSTON PHILADELPHIA

PITTSBURGH SAN FRANCISCO LONDON

EXPORT DEPT 318-322 HUDSON ST. NEW YORK

LUNKENHEIMER VALVES

TALK NUMBER EIGHT BY A PROMINENT DISTRIBUTOR



» » » "Will You Use Our Services or Pay Interest?"



Above—Mr. J. A. Blechman, President of The Blechman-Crosby Company of Memphis, Tennessee. This company's services are of a definite economic value to the prosperity of its business territory.

WE save the consumer investment and interest charges. At least, we do so for the ones who use us. Our purchasing power is as great as the largest user possesses, consequently, if used as a company warehouse we can and will eliminate the original investment with its consequent carrying charge.

We recommend Republic's Belting—Hose—Packing—Molded and Lathe Cut Goods."

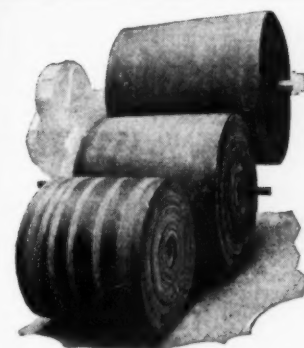
The above statement is characteristic of those made by prominent distributors all over the country. It explains in part how the Industrial Supply Distributor, helping to solve the important problem of broad markets and economical distribution, upholds high quality, maintains fair prices and saves needless efforts on the part of both consumer and manufacturer.

**THE
REPUBLIC RUBBER CO.**

**Youngstown
Ohio**

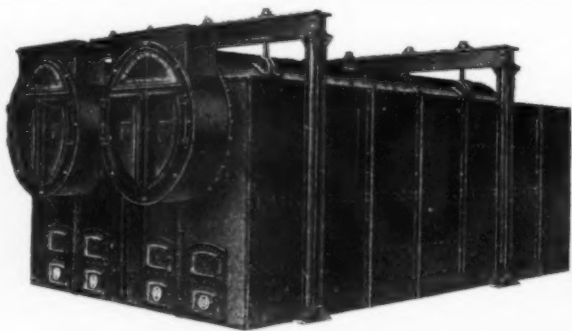


**REPUBLIC means
the Best Mechanical
Rubber Goods**



Republic's Conveyor Belting line is complete, in that, Republic's experimental department has developed these labor savers for every known condition. Whether the material be hard or soft—hot or cold—light or heavy—some one of Republic's Belts will do the work economically.





BOILERS

(Return Tubular)

STEEL CASINGS
STACKS BREECHINGS

TANKS

for every purpose

FABRICATED STEEL PLATES

Up to 3" Thick

Write For Prices

THE HEDGES WALSH WEIDNER CO.

Main Office and Works

CHATTANOOGA, TENNESSEE

Eastern Office: 200 Madison Ave., New York, N. Y.

Subsidiary International Combustion Engineering Corporation

High Temperature Cements

FIREBOND THERMOLITH

REFRACTORIES

Fireclay High-Alumina Silica Chrome Magnesite

Acid-Proof Brick

HARBISON-WALKER REFRACTORIES CO.
World's Largest Producer of Refractories Pittsburgh, Pa.

EXCELSIOR

All Standard and
Special Shapes

FIRE

ALABAMA CLAY
PRODUCTS CO.
BIRMINGHAM ALABAMA

BRICK

BRICK—CHIMNEYS—CONCRETE
BOILER BRICKWORK

The Rust Engineering Co.

Engineers and Contractors

BIRMINGHAM, ALA.

PITTSBURGH—WASHINGTON—NEW YORK—CHICAGO

CONTINENTAL GIN COMPANY

announces many new improvements in Cotton
Ginning Machinery and Heavy Duty
Oil Engines.

Write for Details

Address: 4600 4th Ave. So., Birmingham, Ala.

BOILERS SAW MILLS

Largest Works of the Kind in the South
Engines—Pumps—Boiler Tubes—Grate Bars—Castings
LOMBARD IRON WORKS & SUPPLY CO.
AUGUSTA, GA.
Reinforcing Bars—Structural, Bar and Sheet Steel
Parts and Repairs Belting—Packing

TANKS STACKS

TITUSVILLE

THE
TITUSVILLE
IRON WORKS CO.
TITUSVILLE, PENNA.

POWER AND
HEATING BOILERS

FOR ALL
INDUSTRIAL REQUIREMENTS

CHARLESTON DRY DOCK & MACHINE CO.

Successors to VALK & MURDOCH CO.

MARINE AND STATIONARY BOILERS
Repairs to Steel and Wooden Vessels

8,000-ton Dry Dock—1,500 and 600-ton Marine Railways
CHARLESTON, S. C.

Vogt

PRODUCTS

REFRIGERATING AND ICE
MAKING MACHINERY—
WATER TUBE & HORIZONTAL
RETURN TUBULAR BOILERS
DROP FORGED STEEL VALVES
& FITTINGS—OIL REFINERY
EQUIPMENT—Ask for Bulletin

HENRY VOGT MACHINE CO., Manufacturers, Louisville, Ky.

WATER

Purified
Softened
Filtered

For every industrial and domestic use

Filters—Pressure and Gravity
Softeners—All types

127 years old

Founded 1802

WM. B. SCAIFE & SONS CO.

Executive Offices, OAKMONT, PA.

PITTSBURGH

NEW YORK

CHICAGO

WATER FILTERS

Pressure and Gravity type for Municipal Water Supplies,
Rayon Manufacturing Plants, Textile Finishing Estab-
lishments, Raw Water Ice Plants, Laundries, Etc.

ROBERTS FILTER MANUFACTURING COMPANY

604 Columbia Avenue

Darby, Pennsylvania

FOR INDUSTRIAL, RAILROAD
MUNICIPAL AND OTHER USES

FILTERED WATER SOFTENED

Softeners or Filters of any type or capacity as separate or
combination Systems.

AMERICAN WATER SOFTENER COMPANY

S. E. Cor. 4th & Lehigh Ave.

Philadelphia

United States Refractories Corp. and Savage Mountain Fire Brick Co.



•
**NOW
UNITED**

WITH

NORTH AMERICAN REFRACTORIES CO.

*—to give you a complete line of quality-tested,
quickly available refractory products . . .*

THROUGH the purchase of the business of the United States Refractories Corporation and the Savage Mountain Fire Brick Company there is added to the North American line of time-proven refractories three splendid products—the United States Mt. U. Silica Brick, the Loftus Patented Checker Brick and the Savage Mountain Fire Brick.

The complete and comprehensive North American line is now manufactured in 17 modern plants strategically located for prompt shipping service. Sales offices in 8 major cities offer convenient contact points in ordering any of the following brands of refractories:

PENNSYLVANIA DISTRICT

Arrow	Elk Steel	M. D. Elk	Queens Run Glass	Wire Cuts
Crescent	Flint Arrow	North Bend	Reliance	Acid Proof Brick
Crescent Bung	Keystone	Power	Rotex	Mt. U Silica Brick
Elkco Special	King	Queens Run	St. Marys	Mt. U Gannister Rock

KENTUCKY DISTRICT

Ashland • Ashland Crown • Ashland Empire Crown • Ashland High Grade • Ashco • Ashland Blast Furnace
Ashland Stove

NORTHERN OHIO DISTRICT

Savage • Buckeye • Dover • Dover Flint • Wire Cuts • Acid Proof Brick

MISSOURI DISTRICT

Farber Mo. High Grade • Farber Mo. High Grade Bung • F. F. B.

MARYLAND DISTRICT

S. M. Fire Brick • Savage Mountain Fire Brick

SPECIALTIES

Loftus Checker Brick {patented} • Narfrax High Alumina Brick • Mt. U. Silica Cement
Narcoset High Temperature Bonding Mortar • Narco 505 Furnace Patch
Crescent High Temperature Cement, Cold Set and Hot Set {Dry} • Bohn Furnace Bottom

NORTH AMERICAN REFRACTORIES CO.

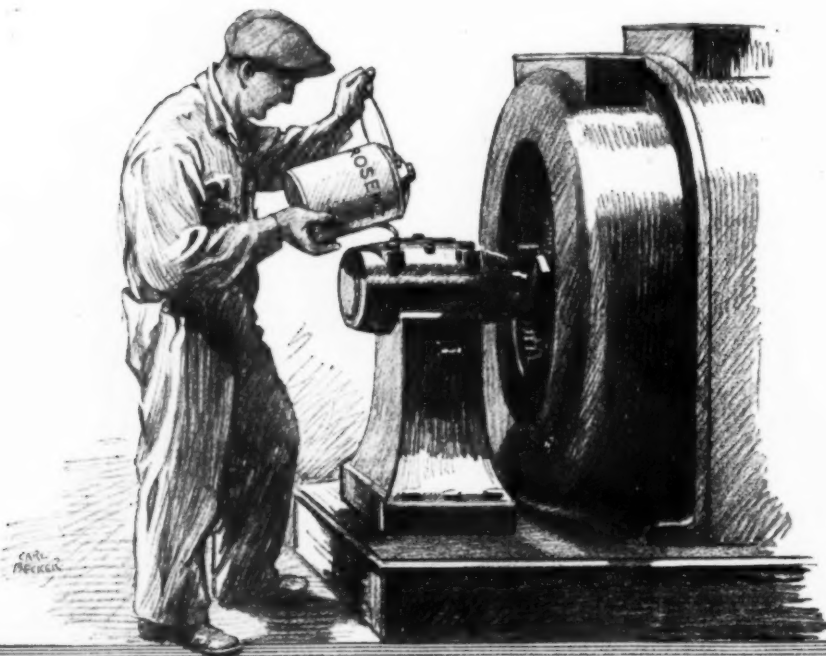
National City Bank Building • Cleveland, Ohio

SALES OFFICES

BOSTON ••••• 89 Broad Street	PHILADELPHIA ••••• Otis Building
BUFFALO ••••• 1518 Hertel Avenue	PITTSBURG ••••• Koppers Building
CHICAGO ••••• 140 South Dearborn St.	HAMILTON, Ontario, Canada,
ST. LOUIS ••••• 1946 North Broadway	North American Refractories,
NEW YORK ••••• 50 Church Street	Ltd. ••••• 20 Jarvis Street

PLANTS

ASHLAND, KY. •• Plant No. 1	FROSTBURG ••••• MD.	RENOVO, PA. •• Plant No. 1
ASHLAND, KY. •• Plant No. 2	HAYWARD ••••• KY.	RENOVO, PA. •• Plant No. 2
CLEARFIELD ••••• PA.	LUMBER ••••• PA.	STRASBURG, O. • Plant No. 1
CURWENSVILLE ••••• PA.	LOCK HAVEN ••••• PA.	STRASBURG, O. • Plant No. 2
DAGUSCOHONDA ••••• PA.	MT. UNION ••••• PA.	ST. MARY'S ••••• PA.
FARBER ••••• MO.	NORTH BEND ••••• PA.	



YOU'D FIRE A MAN WHO USED KEROSENE FOR OILING

KEROSENE is an oil with very little lubricating value. It is a cheap oil but a very expensive lubricant. You wouldn't use it on a bearing if you wanted good lubrication.

Are you as careful about the kind of insulated wires and cables used in your plant? There is as much difference between various kinds of rubber insulation as between various kinds of oil. A wire and cable insulating compound containing Wild, Up-River, Fine Para rubber liberally used and intelligently vulcanized is far superior to any other rubber insulating compound. It is stable. It deteriorates very slowly and retains its insulating properties for many years.

OKONITE insulated wires and cables are dependable because they contain fine materials liberally used and intelligently applied. Their high quality is a definite asset to a dependable power supply and, like the best of lubricating oil, they are by far the most economical in the long run.

OKONITE PRODUCTS

Okonite
Insulated Wires
and Cables
•
Varnished Cambric
Cables
•
Okonite
Insulating Tape
•
Manson & Dundee
Friction Tapes
•
Okocord
•
Okoloom

OKONITE-CALLENDER PRODUCTS

Impregnated
Paper Cables
•
Super-tension Cables
•
Splicing Materials

THE OKONITE COMPANY

Founded 1878

THE OKONITE-CALLENDER CABLE COMPANY, INC.

Factories: Passaic, N. J.

Paterson, N. J.

SALES OFFICES:

NEW YORK

BIRMINGHAM

CHICAGO

SAN FRANCISCO

PITTSBURGH

LOS ANGELES

ST. LOUIS

BOSTON

SEATTLE

ATLANTA

DALLAS

Novelty Electric Co., Philadelphia, Pa.

F. D. Lawrence Electric Co., Cincinnati, O.

Canadian Representatives:

Engineering Materials, Limited, Montreal

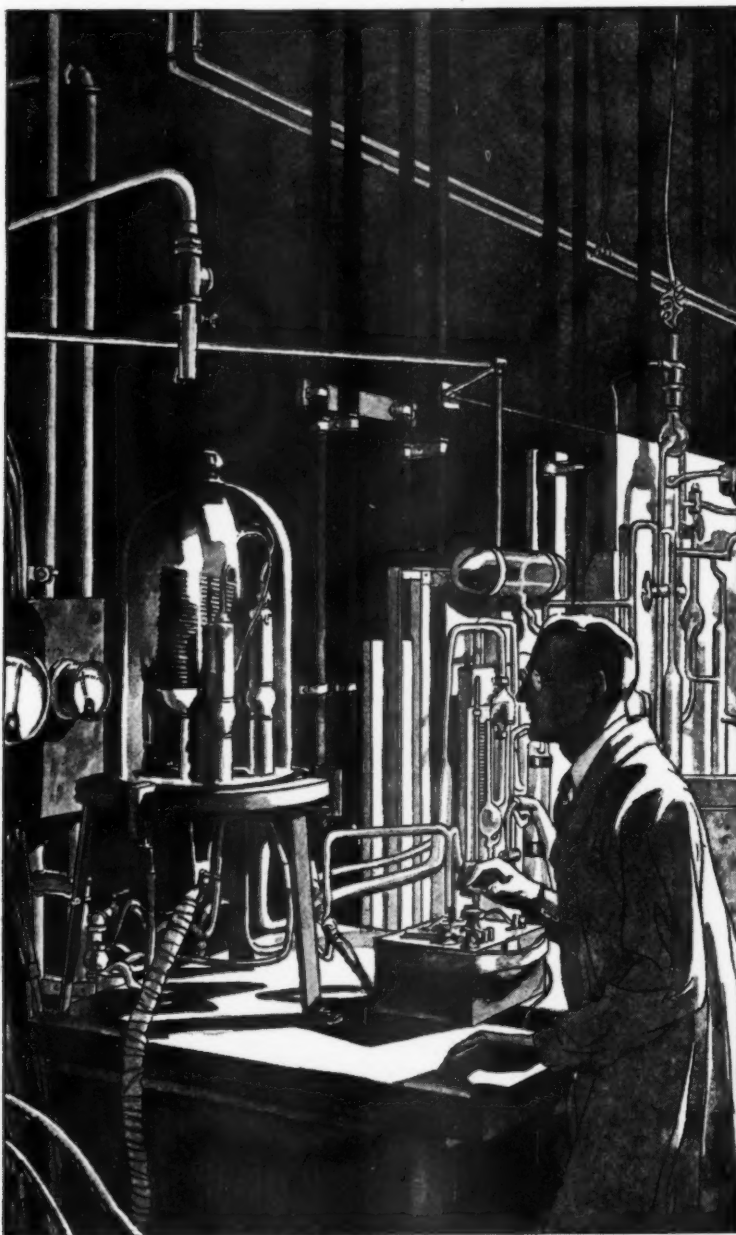
Cuban Representatives:

Victor G. Mendoza Co., Havana

OKONITE QUALITY CANNOT BE WRITTEN INTO A SPECIFICATION

THE ECONOMICS OF THE ELECTRICAL INDUSTRY

TOMORROW'S COST PROBLEMS...



Tune in the Westinghouse Salute over WJZ and the coast-to-coast network, every Tuesday evening.

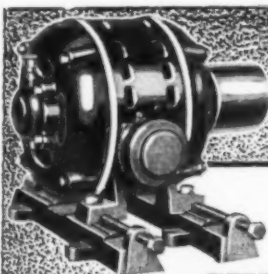
Westinghouse

...in Today's LABORATORIES

Modern science may well smile at the medieval alchemist, calling vainly upon the powers of darkness to aid him in transmuting base metal to gold. The workers in today's research laboratories call upon the powers of electricity — and secrets of far greater value are their almost daily reward.

It is impossible to estimate the vast increase to the world's wealth that electrical research has brought. In the Westinghouse laboratories at East Pittsburgh alone, discoveries valued well into the billions have been made. A cost-saving contribution to a single industry may be worth millions. A new metal to cut down transformer losses, a De-ion circuit breaker that eliminates oil quenching and consequent fire hazard, a marvelous "electric eye" that performs all manner of human tasks — and never forgets; these modern Westinghouse developments are part of the day's work typical of an organization devoted to enlarging the service of electricity in every field of modern life.





GIVE *Red Bands* YOUR HARD JOBS

Every Howell electric motor is distinguished by its Red Bands and the way it masters the hard jobs.

Ask any Howell user

Howell Electric Motors Company
HOWELL MICHIGAN
SALES and SERVICE in PRINCIPAL CITIES

FIFTY YEARS

Experience in the designing and manufacturing of

MATERIAL HANDLING EQUIPMENT

puts us in a position to supply equipment of proven worth at the lowest possible price.

Call on us for

Apron Conveyors
Belt Conveyors
Chain Conveyors
Gravity Roll Conveyors
Spiral Conveyors
Bucket Elevators
Elevator Buckets
Skip Hoists
Car Pullers

Sheet Metal and Structural Steel Work

THE WEBSTER & WELLER MFG. COMPANIES

1820-1856 N. Kostner Ave.

CHICAGO, ILL.

Offices in the principal cities

ALLIS-CHALMERS MFG. CO.

MILWAUKEE, WIS., U. S. A.

DESIGNERS AND BUILDERS OF

Steam Turbines, Electrical Machinery, Steam, Gas and Oil Engines, Centrifugal Pumps, Crushing & Cement Machinery, Etc.



P&H
Traveling
Cranes and Hoists

Harnischfeger Corporation
Established 1884
Crane and Hoist Division
3027 National Ave.
Milwaukee, Wis.

Definite assurance of Service

We make a definite guarantee on the Harrington Peerless Hoist. We guarantee Peerless gears for five years against abnormal wear or break.

That is your definite assurance of long service, safety, and strength, in a hand chain hoist.

Write for Bulletin

THE HARRINGTON COMPANY
Philadelphia, Pa.



Clark "TwinVeyor" TIERS HIGH AND FAST



Aim the Twin-Veyor where you want to send the material and zip! up it goes. Keeps the men on top of the piles busy. Assembled quickly in sections, it's flexible, easily moved, takes angles up or down, left or

right. A power head keeps two external spiral tubes turning toward each other. Conveying, elevating and tiering jobs are quickly handled, at low cost.



The Clark Trutractor Co.

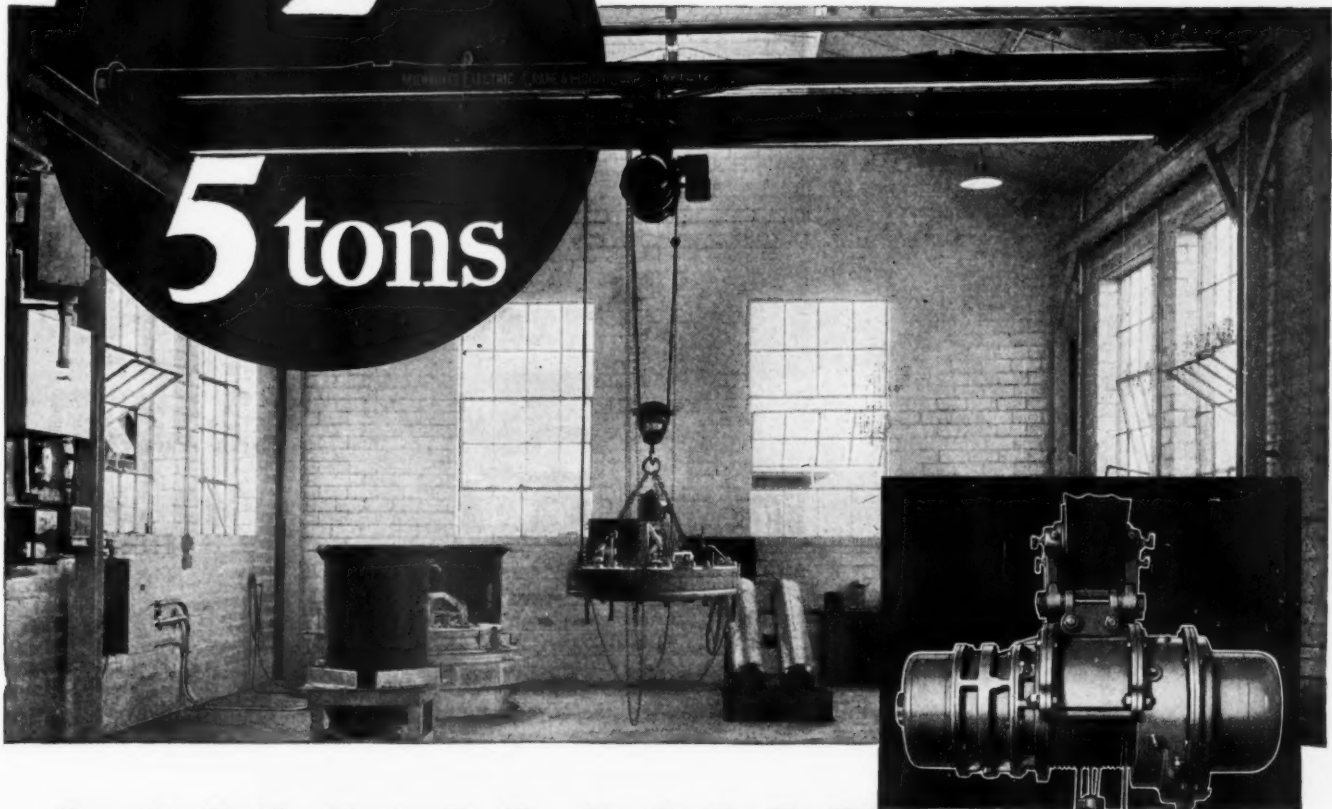
Battle Creek, Mich.

Attach this
ADVERTISEMENT
to your inquiry

**1
1/2 to**

5 tons

**FOR FAST, LOW COST
HANDLING OF LOADS
WITHIN THIS RANGE**



MILWAUKEE

SINGLE I-BEAM CRANES

FOR service where the installation of a heavy crane is not warranted Milwaukee Single I-Beam Cranes handle materials dependably and economically. They provide overhead crane service throughout the height, width and length of the shop at low cost.

Available in a capacity range of 1/2 to 5 tons, spans of 10 to 45 feet in four types: I-Beam, push type; I-Beam, hand racked, with outrigger channel bridge; I-Beam, hand racked, without outrigger channel but laterally braced by angles from the end trucks; I-Beam with outrigger channel, motor driven bridge. All can be had completely wired for use with an electric hoist arranged for floor control. The motor driven bridge can be arranged for cab control . . . In every detail of construction Milwaukee Hoist Type Cranes measure up to the high standards of Milwaukee Roller Bearing Cranes & Monorail Hoists. Write for complete information.

MILWAUKEE ELECTRIC CRANE & HOIST CORPORATION, Milwaukee, Wisconsin

Division of Harnischfeger Corporation



MILWAUKEE

**STANDARD MONORAIL HOISTS 1/4 TO 5 TONS
LOW HEADROOM CRANES 3 TO 30 TONS
STANDARD CRANES TO 50 TONS**

Milwaukee Monorail Hoists for modern, high speed material handling. Highspeed; roller bearing equipped; quality construction throughout; capacities 1/4 to 5 tons. Write for complete information.

FEATURES:

Full roller bearing equipped.
Welded Construction.
Alemite Lubrication.
Drive totally enclosed.
Outrigger channel construction employed on cranes of long span and heavy capacity.
Cab control can be furnished if desired.

Made Especially For Industrial Use



HERE is a cabinet toilet tissue that is ideal in every respect for use in industrial plants—Victoria INDUSTRIAL Tissue! It is just right in price, texture and size for economical use wherever there is great consumption and waste.

Victoria INDUSTRIAL Tissue is unusual in that it is pleasingly soft and absorbent, yet exceptionally strong. It has every quality that an industrial toilet tissue should have. Each package contains 1000 sheets, $4\frac{1}{2} \times 5$ ", interfolded for use in Victoria dispensing cabinets. Only two sheets are dispensed at a time, thus preventing waste. And the cabinets can be locked to prevent theft of the tissue. Also the tissue is protected from dust and unsanitary handling. Victoria cabinets are made of pressed steel, in white enamel and other popular finishes. Let us send you samples of Victoria INDUSTRIAL Tissue so that you may judge its qualities for yourself.

Write us today.

The Victoria Paper Mills Co.
Fulton - - N. Y.

VICTORIA INDUSTRIAL TISSUE



Goldens' Foundry & Machine Co.

COLUMBUS, GEORGIA

MANUFACTURERS OF

**MACHINE MOULDED PULLEYS
HANGERS SHAFTING**

Couplings, Pillow Blocks, Floor Stands, Collars, etc.

Send for Price List and Discount Sheet

No. 5 Jr. Punch



Capacity $\frac{1}{4}$ " through
16 Gauge.
Weight $2\frac{1}{4}$ lbs.

Hollow Punch Set



Made in 3 sizes
Self Centering Locating
Spring Point

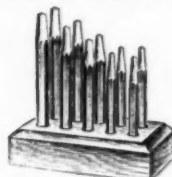
Write for Prices and Catalog on Entire Line.
WHITNEY METAL TOOL COMPANY
117 FORBES STREET

Scratch Awl



Drop Forged Alloy Steel-
Hardened

Solid Punch Set



High Grade Tool Steel.

WALL Products for Industry

Every WALL Product...whether it be a torch or furnace, a carrier or an oiler...is manufactured to give enduring service in industry. Not only the materials from which it is made but the care in its manufacture guarantee its superiority. Ask for catalog showing our full line of

brazed and welded
steel products, sold
by leading supply
houses & jobbers.

P. Wall Mfg. Supply Co.
3126 Preble Ave., N. S.
Pittsburgh, Pa.

Since  1864

DREADNAUGHT TORCHES & FURNACES



OIL CARRIERS

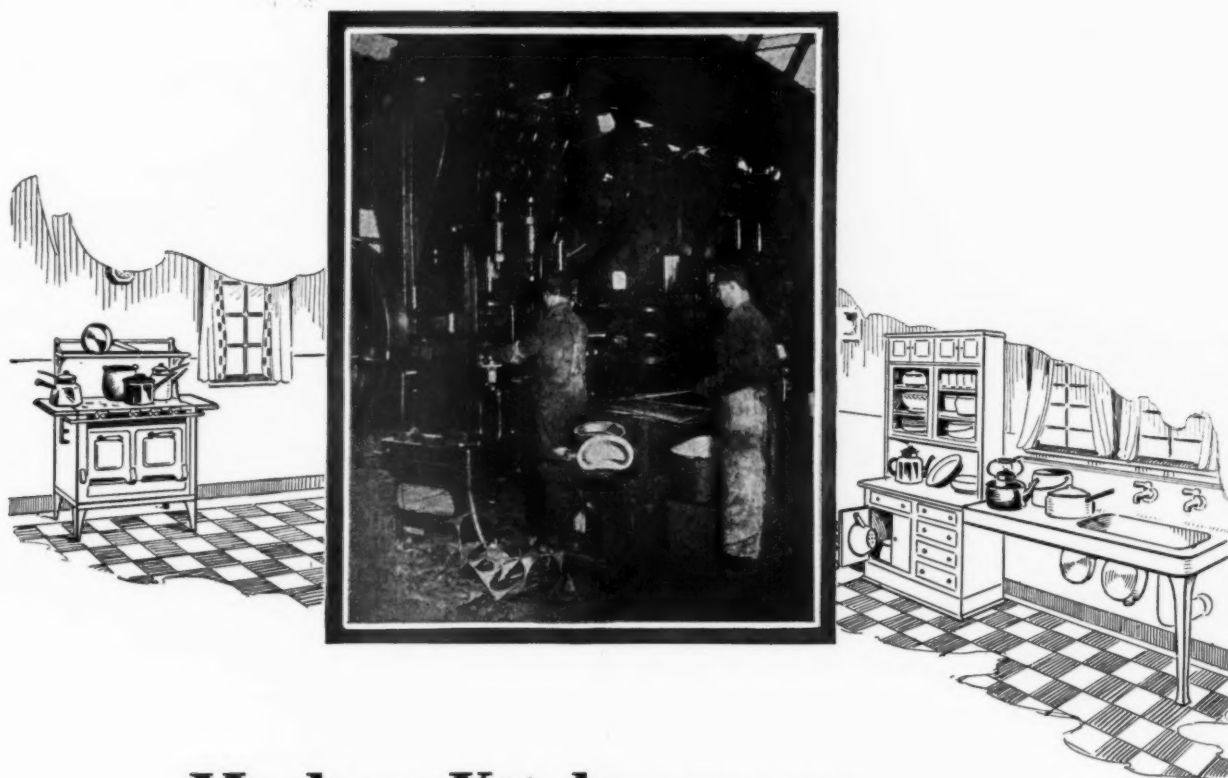


TALLOW POTS



OILERS





Modern Kitchenware is produced by Bliss Presses

IT is literally impossible to find a kitchen without some utensil or appliance that has been made by a Bliss Press. The vast assortment of pots, pans, and other vessels used as kitchen containers is blanked, drawn, and formed largely on Bliss equipment.

And kitchenware is only one of an unending list of sheet metal products that have reached a wider market through the economical production made possible by Bliss equipment. Whatever sheet metal operations may be performed in your plant, it will pay you to investigate the possibilities of doing them quicker or at less cost by the Bliss method. Our 70-year experience is at your service.

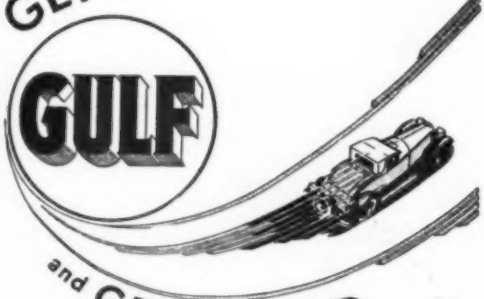
E. W. BLISS CO. MAIN OFFICE AND WORKS **BROOKLYN, N. Y., U. S. A.**

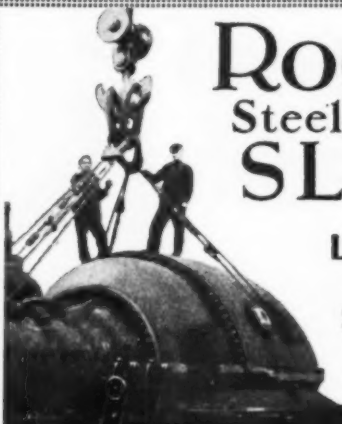
Sales Offices

DETROIT CLEVELAND CHICAGO CINCINNATI ROCHESTER NEW HAVEN BOSTON PHILADELPHIA
Gen. Motors Bldg. Guarantee Title Bldg. 1900 N. Kilbourn Ave. Union Trust Bldg. Times Union Bldg. 2d Nat. Bk. Bldg. Weld Bldg. Nat. Bk. of N. Phila. Bldg.

Factories: BROOKLYN, N. Y. HASTINGS, MICH. SALEM, OHIO

BLISS

GET

and GET AHEAD
POWER—PICK-UP
MILEAGE
 400° F END POINT
 ANTI-KNOCK
 AT NO EXTRA COST
 GULF NO-NOX MOTOR
 FUEL is Aviation Grade
 374° F. End Point.
At the Sign of the Orange Disc
GULF REFINING CO.

Roebbling
 Steel Wire Rope
SLINGS
 LIFT ANY
 LOAD
 SAFELY

 John A. Roebbling's Sons Company
 Trenton, New Jersey

Quality Machinery Deserves the
RAYMOND

 The basic function of a spring is dependable, *unfailing* service. 40 years of service have proved Raymond Springs to be dependable.
 All Metals—Any Quantity.
Machinery Springs of Quality
RAYMOND MFG. CO.
 CORRY, PA.

CONTRACT MACHINE WORK

Parts and Complete Machines
 Heat Treating and Grinding
 Mail Blue Prints for Quotations

GENERAL MACHINE WORKS
 YORK, PA.


GENERAL
 Industrial Machine Work — Heavy and Medium
 Builders of Special Machinery
 Brick Yard Supplies
FERNHOLTZ MACHINERY CO.
 Boyle Ave. and Missouri Pacific Railroad, St. Louis, Mo.

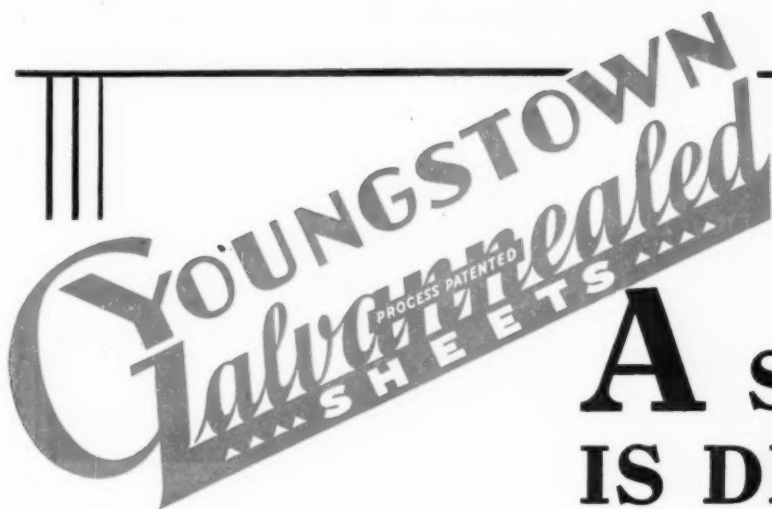
PATTERNS
 Patterns should be made accurate, regardless of size, shape or purpose. We make quality patterns.
A. W. HAAS PATTERN CO.
 179½ Garnett St. S. W. Atlanta, Ga.

RICHMOND
STRUCTURAL STEEL CO.
 ORNAMENTAL IRON — GREY IRON CASTINGS
RICHMOND, VA. **BRANCH**
NORFOLK, VA.

GALVANIZING—Hot Process
 Cadmium Plating a Specialty
GALVANIZED PRODUCTS FURNISHED
BIRMINGHAM GALVANIZING CO.
 Birmingham, Ala.

GALVANIZING **HOT DIPPED**
PROCESS
 The largest job galvanizing plant in the United States
GALVANIZED PRODUCTS FURNISHED
JOSEPH P. CATTIE & BROTHERS
 PHILADELPHIA, PA.

WOODHOUSE CHAINS

Stand the Gaff
WOODHOUSE CHAIN WORKS
 Trenton New Jersey.



A SHEET THAT IS DIFFERENT...

YOUNGSTOWN galvannealed sheets are radically different from ordinary galvanized sheets—in appearance—in workability—in wearability. They were primarily developed to provide sheet metal workers and sheet steel fabricators with a non-flaking zinc coated sheet which would withstand heat, corrosion, double seaming and drawing, and lends itself admirably to all paint, duco, and lacquer work and because of its natural dull finish does not need to be primed, chemically treated, or “weathered” and assures perfect finish and long life.

The uses of Youngstown galvannealed sheets are almost without limitation and we are confident that once you have tried them, you, too, will standardize on Youngstown galvannealed sheets for your sheet metal work.

A 'phone call, letter or wire to our nearest office will bring you the complete story of Youngstown galvannealed sheets—their features and advantages.

THE YOUNGSTOWN SHEET AND TUBE COMPANY

One of the oldest manufacturers of copper steel, under the well-known and established trade name "Copperoid"
General Offices—YOUNGSTOWN, OHIO

DISTRICT SALES OFFICES

ATLANTA—Healey Bldg.	MINNEAPOLIS—Andrus Bldg.
BOSTON—80 Federal St.	NEW ORLEANS—Hibernia Bldg.
BUFFALO—Liberty Bank Bldg.	NEW YORK—30 Church St.
CHICAGO—Conway Bldg.	PITTSBURGH—Oliver Bldg.
CINCINNATI—Union Trust Bldg.	PHILADELPHIA—
CLEVELAND—Term'l Tower Bldg.	Franklin Trust Bldg.
DALLAS—Magnolia Bldg.	SAN FRANCISCO—
DENVER—Continental Oil Bldg.	55 New Montgomery St.
DETROIT—Fisher Bldg.	SEATTLE—Central Bldg.
KANSAS CITY, MO.—	ST. LOUIS—
Commerce Bldg.	525 Louderman Building
MEMPHIS—P. O. Box 462	YOUNGSTOWN—Stambaugh Bldg.
LONDON REPRESENTATIVE—The Youngstown Steel Products Co., Dashwood House, Old Broad St., London, E. C. Eng.	



Brief Facts

- Dull Finish coating
- Coating won't chip
- Coating won't flake
- Coating won't fuse
- Coating won't loosen
- Coating won't drop off
- Takes paint immediately
- Unnecessary to weather
- Unnecessary to treat chemically
- No gloss to kill
- Paper sticks tighter
- Saves painting cost
- Withstands corrosion

YOUNGSTOWN

GALVANIZED SHEETS PROTECT :: SAVE WITH STEEL

McClintic-Marshall Company

Steel Bridges *and* Buildings
Tanks, Barges, Pipe, Transmission Towers
and Plate Work

General Offices:- PITTSBURGH, PA.

OFFICES IN PRINCIPAL CITIES

THE PHOENIX IRON CO.

MANUFACTURERS OF OPEN HEARTH

Structural Steel Shapes, Beams,
Channels, Angles, and Ship Shapes

Works: Phoenixville, Pa. Main Offices: Philadelphia, Pa.

OFFICES:

22 S. 15th St., Philadelphia 30 Church St., New York
Munsey Building, Washington 110 State St., Boston
City Savings Bk. Bldg., Albany, N. Y. 26 Victoria St., London

THE PHOENIX BRIDGE CO.

Engineers, Fabricators, and Erectors
Bridges and Other Structures of Steel

CAPACITY 60,000 TONS

Works and Engineering Offices:

Phoenixville, Pa.

CAROLINA STEEL & IRON COMPANY GREENSBORO, N. C.

Sales Office:—709 Nissen Bldg., WINSTON-SALEM, N. C.

Structural Steel FOR Buildings and Bridges

Capacity 1000 Tons per Month. 3000 Tons in Stock
The Largest Steel Fabricators in the Carolinas

CONVERSE BRIDGE & STEEL CO. STRUCTURAL STEEL

For

Industrial Buildings, Mines, Refineries,
and the Building Trade

CHATTANOOGA

TENNESSEE



CHAMPION BRIDGE COMPANY
WILMINGTON, OHIO
Manufacturers of
Bridges and Structural Work
Atlanta, Ga. Southern Offices:
FORT LAUDERDALE, FLA.



BELMONT IRON WORKS
PHILADELPHIA NEW YORK EDDYSTONE
Southern Sales Office, Charlotte, N. C.
Engineers Contractors Exporters
Structural Steel
Complete Industrial Buildings

ATLANTIC BRIDGE COMPANY

ENGINEERS • CONTRACTORS • ERECTORS

BRIDGES • FOUNDATIONS • BUILDINGS

GREENSBORO, NORTH CAROLINA

Bristol Steel & Iron Works, Inc.

STRUCTURAL STEEL FOR BRIDGES, BUILDINGS

AND ALL INDUSTRIAL PURPOSES

STEEL PLATE & MISCELLANEOUS IRON WORK

BRISTOL, VA.—TENN.



NASHVILLE BRIDGE COMPANY
NASHVILLE, TENN.
Engineers—Fabricators and Erectors
of Bridges. Buildings, Transmission
Towers and other Types of Structural
Steel.



STEEL
For structural steel, standard steel buildings, steel roof
and floor trusses, steel tanks, steel plate construction write
THE INGALLS IRON WORKS CO. Plants: Birmingham-
ham, Ala., Verona, Pa. (in the Pittsburgh District).
Offices: New York, New Orleans, Tampa, Atlanta, Jackson,
Miss.

ROANOKE IRON & BRIDGE WORKS, Inc.
Structural and Ornamental Iron
Wrought Steel Fences

Gray Iron Castings

FROM 1 TO 10,000 LBS.

Write for Estimates

ROANOKE, VA.



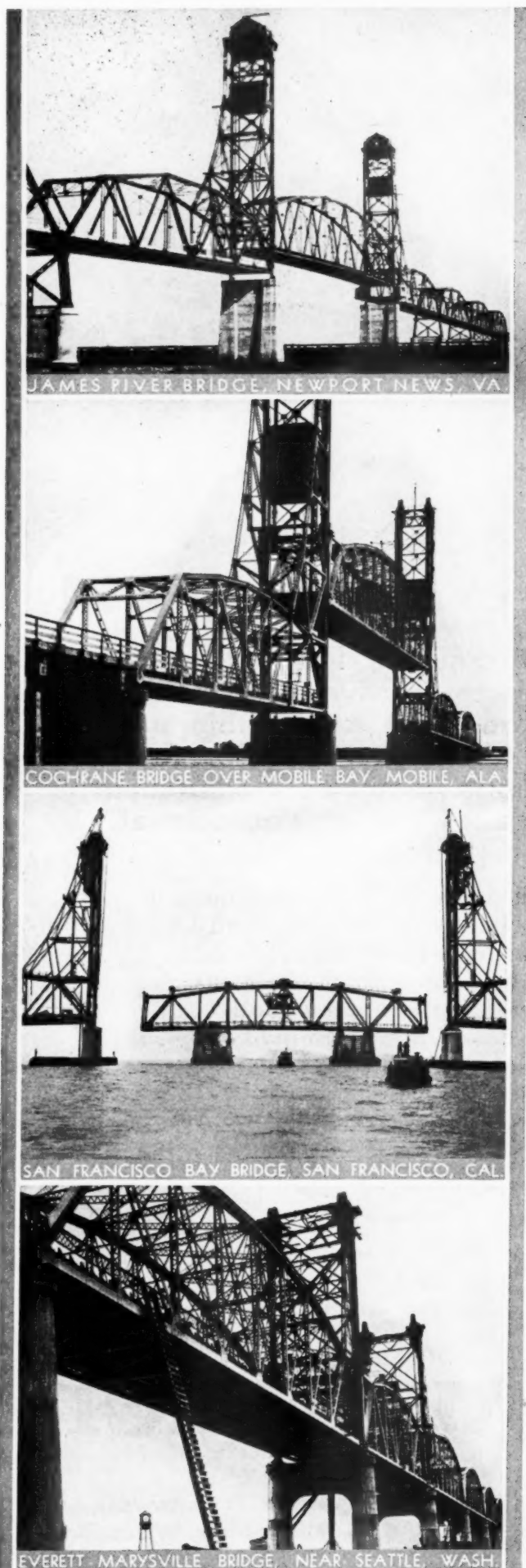
Patterson-Built

TACKLE BLOCKS

A reliable block to meet every requirement.

Write for Catalog No. 22

W. W. Patterson Co., 57 Water St., Pittsburgh, Pa.



Weight and Counterweight

WITH each Vertical Lift Span there are two counterweights, one at each end to counterbalance the weight of the lift span as it raises up and down. Sheaves, cables, gears and motors properly coordinated and synchronized permit easy operation and lifting of hundreds of tons of weight.

We have built in the past twenty years or more a great many vertical lift bridges throughout the country. This is only one of the many kinds of steel work, both bridges and buildings which we do. But it is probably the most exacting to be found. And its successful handling indicates a thoroughly capable organization to which may be safely intrusted all problems of steel design and construction.

Let us furnish you designs and estimates on your steel needs whether they are large or small. If you have not decided to use steel, let us show you its advantages and economies. No obligation is involved.

VIRGINIA BRIDGE & IRON CO.

Roanoke Birmingham Memphis Atlanta New Orleans
New York Los Angeles Charlotte Dallas El Paso

VIRGINIA BRIDGE STEEL STRUCTURES

James River Bridge: More than 5 miles long and crosses the historic James River just above its mouth at Newport News. The engineers were J. E. Greiner Company, Baltimore, Md., and Turner Construction Co., New York, general contractors.

Cochrane Bridge, over Mobile Bay: This Lift Span is 325 feet long and raises to a clear height of 135 feet above water. Harrington, Howard & Ash, Kansas City, Mo., were engineers and Kansas City Bridge Co., Kansas City, General Contractors.

San Francisco Bay Bridge: One of the longest highway bridges in the world, 7 miles in length. Waddell & Hardesty, New York, Engineers, and Raymond Concrete Pile Co., New York, General Contractors. View shows lift span being floated into place by our erection forces.

Everett-Marysville Bridge: An important highway bridge hook-up by the State of Washington, on which we furnished a number of fixed spans, 2 swing spans and a vertical lift. J. A. McEachern Co., Seattle, were General Contractors on the entire project. Waddell & Hardesty were Engineers on the lift span.



**Wherever —
whatever — men build**

— when great construction must be time-scheduled, operation by operation, and actual costs must be kept within narrow estimates, the indispensable, fundamental essential is not only equipment performance, but staunch, loyal, unfailing dependability!

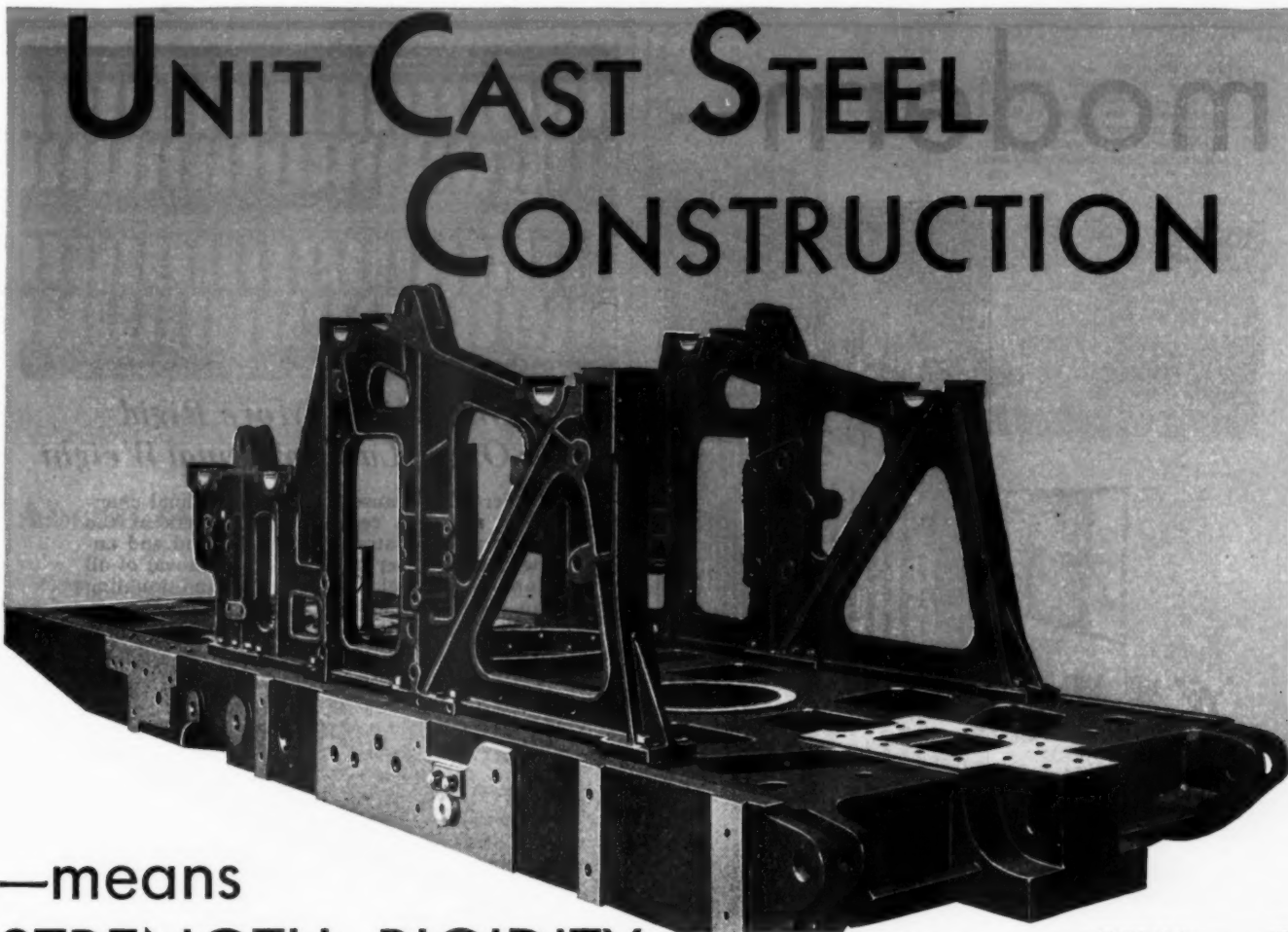
Above all things N. E. C. equipment is built to be trustworthy, to stand behind its owner in doing its job, and *keep* doing it, without disorganizing delays — and behind it is N. E. C. Service, in itself an unequalled value to the equipment owner.

N. E. C. LINES
KOEHRING
 Pavers, Mixers; Power Shovels, Pull Shovels, Cranes, Draglines; Dumpsters.
INSLEY
 Excavators; Concrete Placing Equipment, Cars, Buckets, Derricks.
T. L. SMITH
 Tilting and Non-tilting Mixers, Pavers, Weigh-Mix.
PARSONS
 Trench Excavators, Backfillers.
C. H. & E.
 Portable Saw Rigs, Pumps, Hoists, Material Elevators.
KWIK-MIX
 Mixers: Concrete, Plaster and Mortar.

National Equipment Corporation

**30th St. & Concordia Ave.
Milwaukee, Wisconsin**

A 5717-I-C
 J. L. Hart Machinery Company, 407 Eunice Avenue, Tampa, Fla.; Young & Vann Supply Company, 1725 First Avenue, Birmingham, Ala.; Wilson-Weesner-Wilkinson Company, 108 Fatherland Street, Nashville, Tenn.; Graham B. Bright, 901 Electric Bldg., Richmond, Va.; D. C. Elphinstone, Inc., 129 South Calvert St., Baltimore, Md.; General Equipment Machinery Co., Inc., 116 N. E. Sixth St., Miami, Fla.; W. C. Caye & Company, 100 Walker St., Atlanta, Ga.; Carolina Contractors Equipment & Supply Company, P. O. Box 576, Columbia, S. C.



—means
STRENGTH, RIGIDITY
and PERMANENCE
of ALIGNMENT

The greatest single factor of support for P & H power is unit cast steel construction. All the main frames of P & H Excavators, including the revolving frame, car body, side stands and side frames of the crawlers, are heavy single-piece steel castings. The engine is mounted directly upon the revolving frame, instead of on structural sills attached to the frame. Shafts and gears are kept in perfect alignment at all times. There is less wear, and maintenance costs are reduced to the minimum.

Shafts are of chrome-manganese steel, extra large and heavy, and those for heavy duty are forged and heat-treated. Gears are extra wide faced, hobbled from steel blanks. All of this sturdy construction explains why P & H Excavators are able to stand up year after year under the tremendous power of their large motors.

HARNISCHFEGER CORPORATION

Established 1884

3827 National Avenue, Milwaukee, Wisconsin

Branch Offices: Atlanta, Baltimore, Birmingham, Columbia, Dallas, Jacksonville, Kansas City, Memphis, St. Louis.—Warehouses & Service Stations: Dallas, Jacksonville, Memphis.—Agents: ALBUQUERQUE: R. L. Harrison Co.; ATLANTA: Yancey Bros.; HOUSTON: R. B. Everett & Co.; JACKSONVILLE: Burgman Tractor-Equip. Co.; MIAMI: McDonald Tractor-Equip. Co.; NEW ORLEANS: Southern States Equip. Co.; OKLAHOMA CITY: Wylie-Stewart Machinery Co.; ST. LOUIS: M. G. Hennessey Machy. Co.



P & H

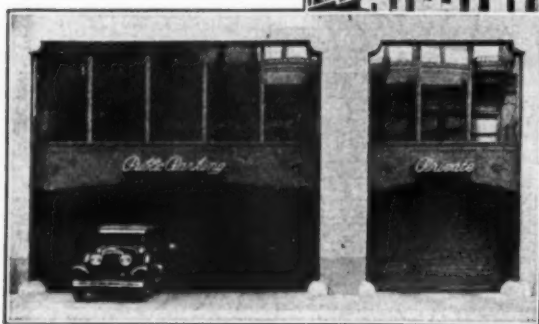
EXCAVATORS

1/2 to 4 cu. yds. (A-561)

modern—



Inset photograph shows two of the Kinnear Rolling Steel Doors used in the new Shell Oil Company Building in San Francisco. Modern in every respect, it was only natural that Kinnear Rolling Doors should be chosen for this magnificent edifice.



YES, modern as the newest building from a standpoint of efficiency, yet not new or untried. Kinnear not only originated the rolling steel door, but has been responsible for every worth while improvement in design and construction. You'll find them in skyscrapers, factories, warehouses, terminals—everywhere the best in rolling doors is wanted. Illustrated catalog and estimates furnished on request without charge or obligation.

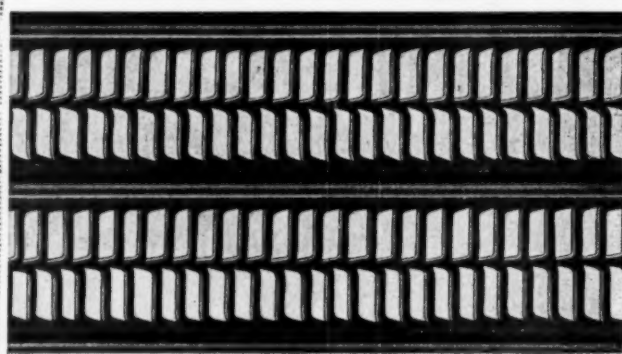
Kinnear

ROLLING DOORS

THE KINNEAR MANUFACTURING CO.

823-873 Field Avenue, Columbus, Ohio, U. S. A.

Boston Chicago Cincinnati Cleveland Detroit New Orleans
New York Philadelphia Pittsburgh Kansas City Washington



Stay-Rib Is More Rigid than Other Laths of Equal Weight

Stiffer . . . because of the longitudinal channels and the reinforcing members at the centers of the strands. Heat-treated and annealed for easier handling and removal of all foreign material. Scratching in and doubling up can be done from one scaffold... a substantial saving in labor.

MILCOR STEEL COMPANY

(formerly Milwaukee Corrugating Co., Milwaukee, Wis. and The Eller Mfg. Co., Canton, Ohio)

Main Offices 1451 Burnham St., Milwaukee

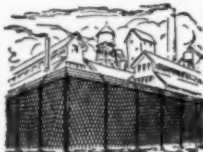
Plants at Milwaukee, Wis., Canton, Ohio, La Crosse, Wis., Chicago, Ill. and Kansas City, Mo.

Sales Offices: New York, 418 Pershing Sq. Building; Boston, Mass., 726 Little Building; Atlanta, Ga., 207 Bona Allen Building; Minneapolis, Minn., 642 Bldg. Exchange Building; Little Rock, Ark., 104 W. Markham Street

MILCOR PRODUCTS

Stewart's IRON AND WIRE FENCE

STANDARD OF THE WORLD



CHAINLINK FACTORY FENCE

Iron Picket Fence
Chainlink Wire Fence
Plain and Ornamental Iron Gates
Chainlink Gates
Miscellaneous Iron Work

For Full Information Write



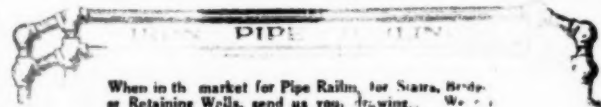
ORNAMENTAL IRON GATES

THE STEWART IRON WORKS COMPANY

619 Stewart Block

INCORPORATED

CINCINNATI, OHIO



When in the market for Pipe Railing, for Stairs, Bridges or Retaining Walls, send us your drawing. We will quote you prices that will be worth considering.

PIPE RAILING CONSTRUCTION CO., Long Island City, New York

DIETRICH BROTHERS

Structural and Ornamental Iron and Steel Works
Large Stock of Standard and Bethlehem Shapes

CONCRETE REINFORCEMENTS
BALTIMORE, MD.



Building and laboratory of Anheuser Busch Ice Cream Co., Inc., Woodhaven, L. I. Equity Construction Co., Inc., New York, engineers and contractors. Bayley Pivoted Windows Screened used throughout.



Absolute Purity . . . a valuable sales asset!

THE use of highest quality materials . . . and their protection during manufacture with Bayley Pivoted Windows Screened . . . that has made Anheuser Busch ice cream a big seller. Possessing features not found in any other window of this type, these screened windows are widely used in bakeries, packing houses, candy factories, hotel kitchens, hospitals, dairies and other buildings where foods are prepared, or from which they are distributed, as well as in power houses and textile mills where protection to equipment or products is essential.

These windows operate without movement of screens or flexing of screen contacts. Screens are easily removable, without use of tools, for cleaning windows or for winter storage. Sections 1½" deep, for extra strength, longer life. Quantity production reduces first cost . . . better design reduces maintenance expense.

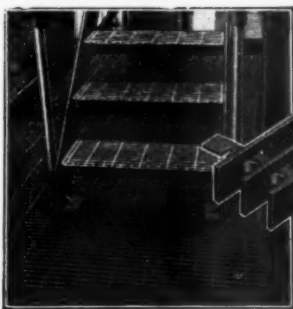
Bayley thorough engineering service, based on 49 years of experience, is available without cost or obligation. Send for illustrated folders. The William Bayley Co., 143 North Street, Springfield, Ohio.



BAYLEY
STEEL WINDOWS & DOORS

District Offices

Cleveland, 449 Terminal Tower
Washington, 1427 I St., N. W.
Atlanta, 407 Bona Allen Bldg.
New York, 67 W. 44th St.
Boston, 5 Park St.
Chicago, 75 E. Wacker Drive



For
strong and
safe flooring—
**WALTER BATES STEEL
FLOOR GRATING
and
STAIR TREADS**

**WALTER BATES STEEL
CORPORATION**
GARY INDIANA.

**Kerlow
Steel Floors**

222-238 CEDAR AVE.
JERSEY CITY, N. J.



DEMAND CONTINUITY - IT COSTS YOU NO MORE!



**OPEN STEEL
FLOORING
and
FLOOR
ARMORING**

← (CONTINUOUS IN EVERY DIRECTION) →

IRVING IRON WORKS CO.
LONG ISLAND CITY, N. Y., U. S. A.

Canadian Licensees:
Crowe's Iron Works, Ltd.,
Guelph, Ontario, Canada

British Licensees: Estler
Brothers, South Molton Road,
Victoria Docks, London, E 16,
England



U. S. Appraisers Stores and Customs Court Building, New York City. Buchman and Kahn, Architects; Alex. D. Crosett, Engineer; Shroder and Koppel, General Contractors; Turner Construction, sub-contractors for concrete and masonry. Twelve stories and basement, area 200 by 400 feet. Structural concrete frame; steel column cores; flat slab and beam-and-girder floors.

Successful Buildings of Reinforced Concrete

Throughout American cities there is growing interest in reinforced concrete building construction. This is the natural result of better understanding of the simplicity and adaptability of concrete for modern structural use. Changes in plans, or details, during erection, are most easily made. It becomes merely a matter of changing forms, and re-arranging reinforcement.

The construction plant is almost wholly within the building itself. Consequently, hoisting of heavy shapes

over the street is practically eliminated.

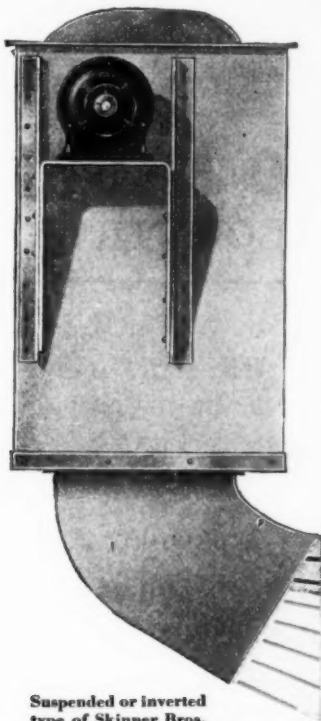
This simplicity of construction is quickly reflected in building costs, and on the right side of the ledger! That is why reinforced concrete is growing in favor, not only for purely commercial buildings, but for monumental, state and government buildings as well.

Many recent noteworthy structures have concrete exteriors, with ornamental work cast in place. Informative literature on this subject is available, and will be mailed to any address on request.

PORTLAND CEMENT Association
Concrete for permanence and firesafety

33 WEST GRAND AVENUE
CHICAGO

A New Heating Method that Promises to Revolutionize Industrial Heating



Suspended or inverted
type of Skinner Bros.
Air-Blanket Heater.

For three years prior to its announcement, last month, the new Skinner Bros. *Airblanket* Method of Heating was put to exhaustive tests under actual working conditions. Then, when Skinner Bros. were fully satisfied that its use would spell new comfort, efficiency and economy in industrial heating, it was presented.

Although only one short month has passed since its introduction, Skinner Bros. *Airblanket* Method of Heating is the talk of architects, plant owners, engineers and contractors the country over.

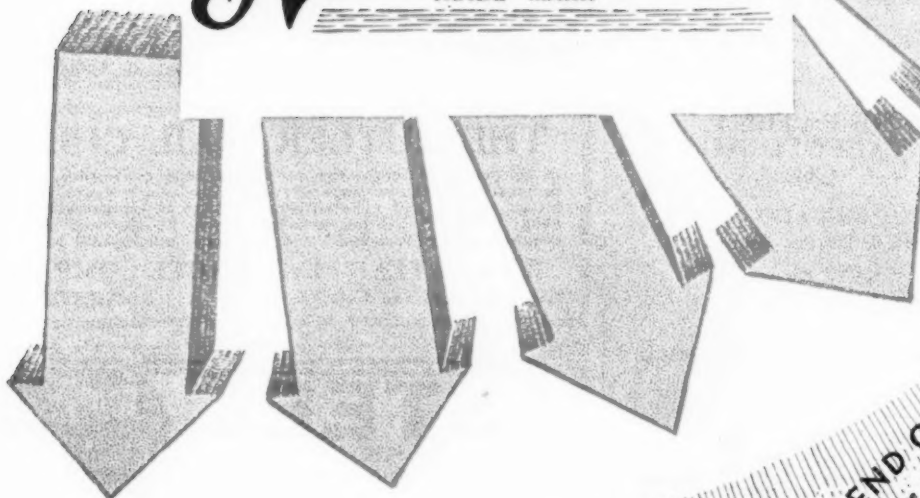
Briefly, here's what Skinner Bros. *Airblanket* Method of Heating is: A method in which a blanket, or ceiling, of low temperature fast-moving air is projected horizontally over the breathing, or working, zone of an industrial building; thereby holding

the warm air, which issues from a unit heater, down in the breathing zone, and enabling it to give off its warmth with less waste.

The full explanation of this remarkable new heating method is given in a booklet entitled: "Controlling Heat and Heating Cost with the *Airblanket*." Mail the coupon for your copy today.

AIRBLANKET

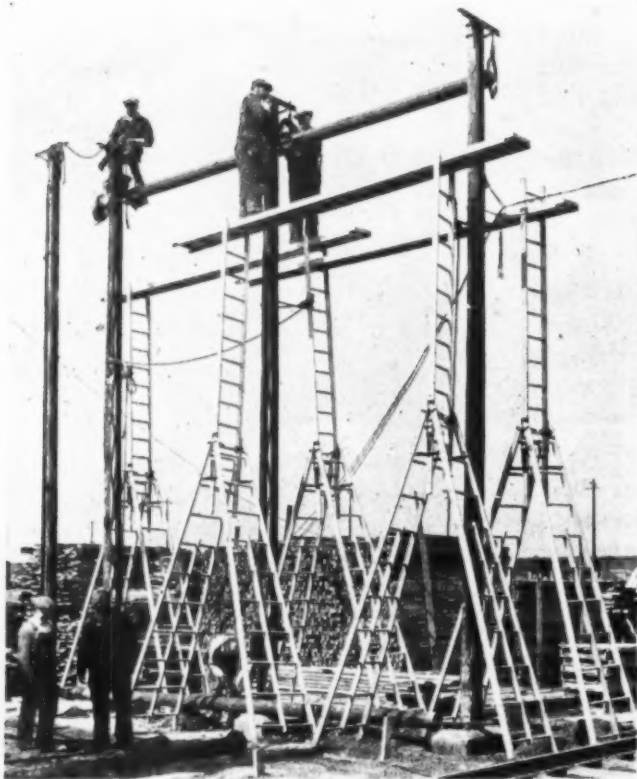
TRADE MARK



SEND COUPON FOR FREE BOOKLET
M.R.-3

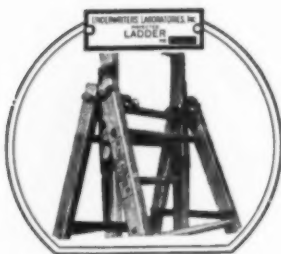
Name _____ Address _____ City _____ State _____
SKINNER BROS. MFG. CO., INC.
1402 S. Vandeventer Ave., St. Louis, U.S.A.
"The Originators of Unit Heating"
Branches in All Principal Cities

Generally Useful around the Plant



"GOLD MEDAL" SAFETY EXTENSION TRESTLES

fill the need for handy equipment whenever maintenance construction, or production jobs go up in the air. Safe, strong and adjustable, these trestles quickly and economically form an efficient scaffold. Because they are light and compact they are easy to transport to the job, even in tight places. And, they store in small space.



This "close up" shows the rugged construction and automatic device, safely locking the center extension at any elevation.

ATLANTA ST. LOUIS
SAN FRANCISCO

Stocked by Mill Supply Jobbers. Sizes from 6 ft. (extending to 20 ft.) to 20 ft. (extending to 35 ft.). Write for full details.

THE PATENT SCAFFOLDING CO.

CHICAGO
1550 Dayton Street

NEW YORK
3821 Sherman St., L. I.
City

BOSTON PHILADELPHIA
PITTSBURGH



THE NATIONAL STANDARD "ALMETL" TRADE MARK REG. U.S. PAT. OFF. FIRE DOORS COVER THE COUNTRY

16 YEAR RECORD WITHOUT
FAILURE IN FIRE OR SERVICE
HIGHEST QUALITY—LOWEST COST
GUARANTEED TWENTY YEARS



MANUFACTURED BY
Merchant & Evans Co.
Philadelphia, Pa.

Manufacturers Of
ELECTRIC AND FREIGHT AND
HAND POWER PASSENGER
ELEVATORS
DUMB WAITERS
MILLNER COMPANY
St. Louis, Mo.

AMERICAN ELEVATORS
PASSENGER AND FREIGHT
AMERICAN
ELEVATOR and MACHINE CO., INC.
Established in 1898
LOUISVILLE, KENTUCKY

THE CUTLER MAIL CHUTE

In its perfected form—the outcome of long experience, designed to meet the requirements of public use under Postoffice Regulation. Simple and substantial in design and construction, durable in finish, with an artistic quality appreciated and much commended by Architects. * * * Details, information on request.

THE CUTLER MAIL CHUTE COMPANY
General Offices and Factory ROCHESTER, N. Y.

STEEL
DESIGNERS, FABRICATORS, ERECTORS
of Structural Steel and Concrete Reinforcing Bars
Immediate Shipments from Charlotte Stock
Office and Plant: Little Pittsburgh
CHARLOTTE, N. C.

**SOUTHERN
ENGINEERING
COMPANY**



SELLERS GARAGE, BIRMINGHAM, ALABAMA

*Warren, Knight and Davis, Architects.**E. R. Maynard Construction Co., Builders.*

THERE is no type of building on which TERRA COTTA cannot be used to advantage. It is usually associated with bank and office buildings, court houses and other public and commercial buildings of all kinds. But Warren, Knight & Davis, of Birmingham, certainly found a splendid use for it on the one story garage pictured above.



Atlanta Terra Cotta Company

Glenn Building

Atlanta, Georgia

Factory at East Point, Georgia

Southern Factory of
Atlantic Terra Cotta Company
19 West 44th Street
New York

Southwest Office
A. P. Clark, Manager
Pract. Eng.
Ind.

Northern Hard Rock Maple Flooring

Holt Hardwood Co., Oconto, Wis.

MEMBERS OF MAPLE FLOORING MANUFACTURERS ASSOCIATION



CREOSOTED TIMBERS

for all purposes

POLES POSTS PILING BEAMS
CROSS TIES BRIDGE MEMBERS MINE SHORING

Send for Catalogue

Taylor-Colquitt Company
Spartanburg - - - South Carolina



SCIENTIFIC LUMBER DRYING

MOORE DRY KILN COMPANY
NORTH PORTLAND, ORE. JACKSONVILLE, FLA.

Delaware Wood Preserving Co.

Sales Office: Finance Building, Philadelphia

Plant: Newport, near Wilmington, Delaware

SERVICE

ALL forest products treated with
all standard preservatives by
all standard processes.

CALCASIEU

Long Leaf

Yellow Pine

"Supreme Structural
Wood of the World"

MANUFACTURED BY

INDUSTRIAL
LUMBER COMPANY, INC.

ELIZABETH

LA.

Creosoted Ties, Piling, Poles and Timbers

Creosote Oil

Docks for Ocean Vessels

American Creosote Works, Inc.

New Orleans, La.

Savannah Creosoting Co., Inc.

Savannah, Ga.

Atlantic Creosoting Co., Inc.

Norfolk, Va.



Designers, Manufacturers and Contractors

of

BLOW PIPE INSTALLATIONS

also High Pressure Long Distance
Blower Systems

NATIONAL BLOW PIPE & MFG. CO., LTD.
NEW ORLEANS, LA.



SCHOOL DESKS

H. H. Andrews & Co.
CHICAGO

107 So. Wabash Avenue

Gulf States Creosoting Co.

PLANTS AT

HATTIESBURG, MISS., MERIDIAN, MISS., JACKSON, MISS.,
SLIDELL, LA., BRUNSWICK, GA., BIRMINGHAM, ALA.

Main Office: HATTIESBURG, MISS.

CREOSOTED MATERIAL

INCLUDING

Lumber, Timbers, Piles, Telephone and
Telegraph Poles and Cross-Arms,
Cross-Ties, Etc.

We also treat with Zinc Meta-Arsenite (colorless)

WE are the sole and only manufacturers of the machine
known under the trade name and trade mark

"CEMENT GUN"

Let us aid you by giving you full information how your new
construction or repair is made with this machine and its product

GUNITE

Experience Has Taught Us All Best Methods

CEMENT GUN CO., INC., Allentown, Penna.

IF YOU WANT TO GET ~
Southern Business
Advertise in the
MANUFACTURERS RECORD

BROOKS-SCANLON

CORPORATION



*"And I'll Tell You
Why*

*You Should Buy
Brooks-Scanlon Lumber"*

LOW
TEMPERATURES
WITH
FAST
CIRCULATION

Because- It is Kiln Dried in the latest and most efficient type of Dry Kiln known to the lumber industry—Moore's Low Temperature, Fast Cross Circulation Fan Kilns, drying it in the minimum time and producing unusually bright, flat lumber, free from defects associated with high temperature drying.

This is the third of a series of "Good Reasons WHY" you should buy Brooks-Scanlon lumber. Watch succeeding issues of this paper



DIRECT WESTERN UNION WIRE IN OUR OFFICE



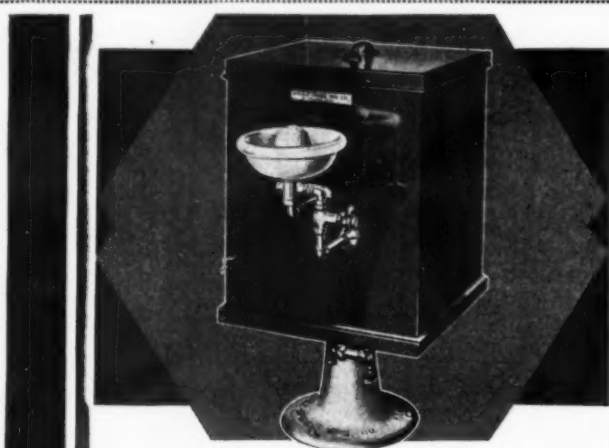
BROOKS-SCANLON CORPORATION

FOLEY, FLORIDA

Manufacturers

Dense Long Leaf Yellow Pine Lumber & Timbers

OUTPUT 100 MILLION ANNUALLY



During those "Warm Spells"

Rundle-Spence drinking fountains in your plant will invigorate your workmen. They will provide good, clean, fresh drinking water at a time when "warm spells" retard production.

Besides every one must drink sanitarily from R-S Vertico Slant Fountains—lips cannot touch the nozzle—this is a feature which means much to you—to your workmen.

Let us send you an illustrated catalog.

Write for it today.

RUNDLE-SPENCE MFG. CO.

63-Fourth St., Milwaukee, Wisconsin

Mathews Fire Hydrant

Because the entire barrel, with all parts, is removable, broken "MATHEWS" hydrants are easily replaced without digging.

CAST IRON PIPE and FITTINGS
SAND SPUN (Centrifugally Cast) and PIT CAST
GATE VALVES VALVE BOXES

R. D. WOOD & CO.
PHILADELPHIA, PENNA.

"The Whole Works" Out in a Jiffy In business continuously since 1803

THE QUALITY UNION

The Dart is the Quality Union, and quality is always cheapest.

The Dart is made of Malleable Iron, with extra heavy pipe ends and with double seated ball joint formed of bronze rings.

IN DART UNION THERE IS DOUBLE STRENGTH

E. M. DART MFG. CO.
PROVIDENCE, R. I.

The Fairbanks Company, Sales Agent
Dart Union Co., Ltd., Toronto, Canada.

TILE  **Roofing and Floor**

for Residences, Business and Industry

Some new, lower cost types in pleasing natural colors. The most economical roof.

Request literature. Send plans for cost.

B. MIFFLIN HOOD COMPANY
Department M. DAISY, TENN.

PIG IRON SEMIFINISHED STEEL BARS & SHAPES  SKELP SHEETS PIPE SPECIALTIES

REPUBLIC STEEL CORPORATION
YOUNGSTOWN, OHIO

1 OF 21

Sizes and Types of Hand and Motor Operated Cold Pipe Bending Machines we make bending 1/4" to 8" in. Pipe.

1-in.—3 cents	3-in.—20 cents	6-in.—80 cents
2-in.—5 cents	4-in.—40 cents	8-in.—\$1.00

Over 8,000 in use. Send for Catalogue.
Pipe Threading and Cutting Machines 1/2" to 16."

AMERICAN PIPE BENDING MCH. CO.
11 Pearl Street Boston, Mass.

Cement-Gun Construction Work
THE RUST ENGINEERING CO.

Engineers and Contractors on all kinds of Cement-Gun Work

WOODWARD BUILDING, BIRMINGHAM, ALA.
New York Pittsburgh Washington Chicago

THE GEORGIA MARBLE COMPANY
Producers and Manufacturers of
GEORGIA MARBLE
Tate, Georgia

Atlanta Chicago Cleveland Dallas New York

Oil-Water-Gas Lines Hydro-E'ctric Penstocks Interior Hull Protection Tank Protection Concrete Waterproofing	<p>FOSTER I.B.M. Impregnated Bituminous Materials PROTECTIVE COATINGS--PAINTS--CEMENTS Write for Foster Catalogue</p> <p>BENJAMIN FOSTER COMPANY Manufacturers--Contractors--Distributors 20th and Venango Streets PHILADELPHIA</p>	<p>Structural Steel Paints Industrial Paints Plastic Cements Floor Cements for Wood Block--Linoleum and Tile</p>
---	---	--

from Shipping Points



CLOW-NATIONAL *gives you*
short haul and quick delivery on L.C.L.
orders

An "L. C. L." order for cast iron pipe or pipe line materials quite often means rush. When it does, Clow-National has 8 shipping points from which materials can be shipped the same day . . . often the same hour . . . that your order is received.

In the back of our monthly publication "Pipe Dreams," is listed each of Clow-National's 23 sales offices. They are really pipe service stations, maintained for the convenience of customers. Write, wire or telephone any one of these where stocks of pipe are carried and your L. C. L. order will leave on the next train.

Incidentally, if you do not receive "Pipe Dreams" regularly every month, send in your address for the mailing list. The subscription price is \$12 per year, with 100% discount for your good will!

James B. Clow & Sons
Chicago, Illinois

National Cast Iron Pipe Co.
Birmingham, Alabama



RUNNING WATER

Your daily water supply—if you live in the city where the water main serves—you seldom, if ever, give it a thought. Your daily water supply—if you live in the country or suburban district, in the small town or village, beyond the city water mains—it becomes a daily problem.

Myers Self-Oiling Power Pumps and Water Systems are designed to fill the gap where the water main terminates. Reliable, low cost power water facilities for homes, farms, country estates, mills, mines or factories, and hundreds of other places is their zone of service. And whether the water needs be small or large there is a style and size to meet individual requirements. See our nearest dealer whose name we will be glad to send you, or if you prefer, write us direct for catalog and complete information.

THE F. E. MYERS & BRO. CO.
ASHLAND, OHIO



WATER

Water shortage problems, whether due to emergency demand or actual failure of supply, can be solved surely and promptly with a Layne guaranteed turn-key well water system.



A Layne Turbine Pump, installed in a Layne Well or your present well, will deliver more water for less money.

*Write for data
No Obligation*

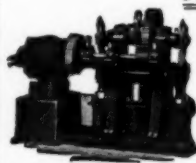
LAYNE & BOWLER, INC.
MEMPHIS, TENN.

ROTURBO CENTRIFUGAL PUMPS

Manistee Iron Works Co., Manistee, Michigan

PLATT IRON WORKS - DAYTON, OHIO.

Smith-Vaile  Pumps



**STEAM and POWER
PUMPING MACHINERY**

DAVIS TURBINE WATER WHEELS



Most Powerful, Durable, Dependable, and Economical in use of water.

Write for catalog.

**DAVIS FOUNDRY &
MACHINE WORKS**
ROME, GEORGIA.

TEAMWORK

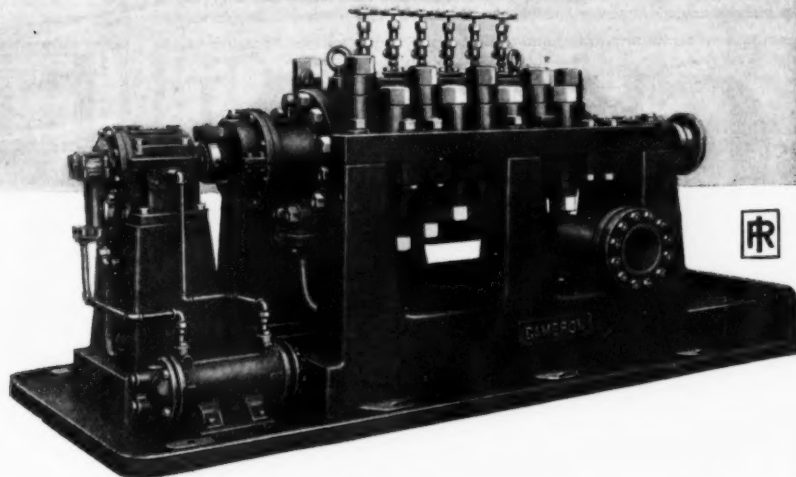


A pump that is more than adequate to do the job for which it was selected . . . a manufacturer with a continuing interest in the satisfactory performance of every unit shipped . . . a customer who solves a pumping problem with the best equipment that money can buy . . . all work together for the successful accomplishment of the allotted task.

Cameron installations tell just such a story of teamwork.

Ingersoll-Rand Company, 11 Broadway, New York City
A. S. Cameron Steam Pump Works

**Cameron
Pumps**



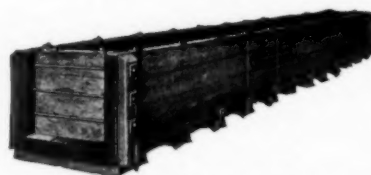


Brass and Copper

Immediate delivery from
18 convenient warehouses

CHASE BRASS & COPPER CO.—Incorporated—
Waterbury, Conn.

FOR PICKLING STEEL



WOOLFORD WOOD TANKS

With special designed acid sealed joints are proving what we claim—the best that are made. 4", 6", 8" material, any length, width and depth. Shipped set up or K. D.

For over seventy years exclusive wood tank builders.

G. WOOLFORD WOOD TANK MFG. CO.

Factory—Darby, Pa.

Mail—Paschall P. O., Phila., Pa.

THE CAMBRIA CLAY PRODUCTS CO.

MANUFACTURERS

SEWER PIPE - FLUE LINING - WALL COPING
FACE BRICK - FIRE BRICK - FIRE CLAY
HOLLOW BUILDING TILE

Office and Works - BLACKFORK, OHIO

SALT GLAZED SEWER AND CULVERT PIPE

Wall Coping, Drain Tile, Flue Lining, Chimney Tops, Hollow
Tile, Fire Proofing, Vitrified Brick, Fire Brick

BANNON'S PATENT LIDDED PIPE FOR STEAM CONDUITS

BANNON PIPE CO. LOUISVILLE, KY.

We Grow These Tanks!



To make sure of the quality of the cypress that goes into "The Tank with a Reputation" we use wood from our own trees, cut in our own sawmills, finished in our own shops by our own workmen with the benefit of thirty years experience in tank designing and building.

The combination means real economy to you in cost and in long, faithful service. Get the Caldwell story the next time you are thinking of tanks.

Send for Catalog

W. E. Caldwell Co.

Incorporated

1900 Brook St., Louisville, Kentucky

Caldwell
TANKS
AND
TOWERS

CAST IRON PIPE - AND FITTINGS -

American Cast Iron Pipe Company

Birmingham, Ala.

SALES OFFICES IN PRINCIPAL CITIES

UNIVERSAL CAST IRON PIPE

THE CENTRAL FOUNDRY COMPANY

Graybar Bldg., 43rd St. and Lexington Ave., New York, N. Y.
Chicago Birmingham Dallas San Francisco

no packing no calking no bell holes

GLAMORGAN PIPE & FOUNDRY CO.

GENERAL FOUNDERS AND MACHINISTS
LYNCHBURG, VA.

DAVIS CYPRESS TANKS

FACTORY TANKS AND STEEL TOWERS

If you handle liquids, for storage or processing, Davis Cypress Tanks very likely will provide new economies. For water, common chemicals, or for mixing and storing solids and compounds. Industrial plants and railroads have used our tanks for 42 years. Ask for estimates and catalog—both sent promptly on inquiry.



G. M. DAVIS & SON

P. O. Box 5, Palatka, Florida



Biggs Welded or Riveted
High Pressure Tanks,
Vessels, Retorts, and Steel
Plate Construction of
every description. Write
for folder shown at left.



THE BIGGS BOILER WORKS CO.
Kent and Bank Streets, Akron, Ohio

One-Fifth
The
Weight of
Cast Iron
Pipe



One-Third
The
Weight of
Wrought
Pipe

ROOT SPIRAL RIVETED PIPE

AN ABSOLUTELY TIGHT DURABLE PIPE

The lap riveted seam repeats its cycle every twelve inches, forming a broad-stiffening rib of great value, and makes Root pipe one-third stronger than any other type of pipe construction. Light weight and simple connections reduce transportation handling and erection costs. Suitable for conveying water, air, gas, exhaust steam and powdered coal.

ABENDROTH & ROOT MANUFACTURING COMPANY
Pipe Specialists Continuously Since 1887 Sales Office: Woolworth Bldg., N. Y.

SAND PUMPS

A wide range of types in sizes 4" to 15"

For belt drive and for direct connection to motor

Illustrated booklet on request

GEORGIA IRON WORKS
AUGUSTA, GA.

TANKS

BOILERS ENGINES
BARGES DRYERS
and MACHINERY
BUILT TO ORDER

Write for Further Information

J. S. SCHOFIELD'S SONS CO.
MACON, GA.

"JASCO" TANKS SEAMLESS DRAWN

EXTRA DEEP DRAWN SHAPES

TANKS FOR GASOLINE—OIL—AIR—ETC.
COMPRESSED GAS CYLINDERS

JOS. A. JANNEY, Jr.

Successor to
JANNEY-STEINMETZ & CO.

1421 Chestnut St.
Philadelphia

30 Church St.
New York

AIR-TIGHT STEEL TANK CO. PITTSBURGH, PA.



TANKS FOR: High pressure gas and air storage—Pneumatic water systems—Gasoline and oil storage—Oil burning equipment—Open top—Welded. AT&CO Genuine Copper Braided Tanks for high pressure — the tightest, safest, strongest tank it is possible to construct by any known process. ASME code tanks.

MECKLENBURG IRON WORKS

Founded 1858

Consulting Engineers

Sheet and Plate Steel Construction Tanks — Water, Oil, Gasoline, Dye
Smoke Stacks and Connections Boilers and Boiler Flues

CHARLOTTE, N. C.

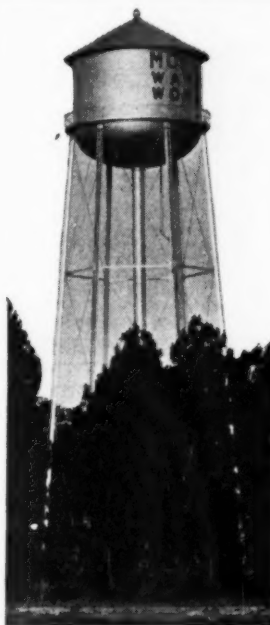
STEEL TANKS

ANY SIZE FOR ANY PURPOSE

PITTSBURGH-DES MOINES STEEL COMPANY
11 NEVILLE ISLAND - PITTSBURGH, PA.

DES MOINES NEW YORK CHICAGO ATLANTA DALLAS SEATTLE SAN FRANCISCO

• C O L E •



Cole Elevated Tank erected for
Mobile Water Works.

Correct in Design Erected

WE are prepared to submit designs to meet any special requirements for tanks and towers whether on building, odd location or requiring auxiliary units.

COLE tanks offer very distinctive advantages in both design and workmanship. They meet the exacting requirements of all insurance authorities.

Our Engineering Department with an experience of 56 years will be glad to co-operate with you.

R. D. COLE MANUFACTURING CO.

Established 1854

NEWNAN, GA.

New York Office
5 Beekman St.

SOUTHLAND PRODUCTS



Million Gallon Tank erected at White Sulphur
Springs, W. Va.

STAND
PIPES
SMOKE
STACKS
TOWERS
AND
TANKS
STEEL
RIVETED
PIPE

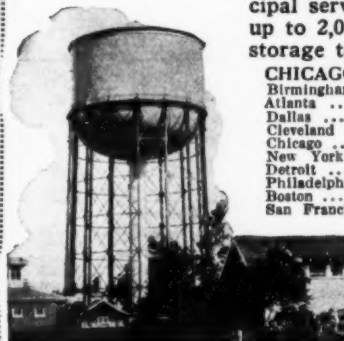
CHATTANOOGA BOILER & TANK CO.
Chattanooga, Tenn.

HORTON TANKS

Ellipsoidal-bottom tanks for municipal service, in standard capacities up to 2,000,000 gallons. Standpipes, storage tanks and steel plate work.

CHICAGO BRIDGE & IRON WORKS

Birmingham 1530 Fifth St., North
Atlanta 1314 Rhodes-Haverty Bldg.
Dallas 3308 Magnolia Bldg.
Cleveland 2216 Union Trust Bldg.
Chicago 2106 Old Colony Bldg.
New York 3113 Hudson Terminal
Detroit 1510 Lafayette Bldg.
Philadelphia 1619 Jefferson Bldg.
Boston 1510 Consolidated Gas Bldg.
San Francisco 1040 Rialto Bldg.



Ask for a copy
of our booklet,
Gravity Water
Supply

DIRECTORY

ARCHITECTS

ENGINEERS

CHEMISTS

GEOLOGISTS

CHEMICAL ENGINEERS

ACCOUNTANTS

CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

Milburn, Heister & Co.

Architects

WASHINGTON, D. C.

Wm. J. J. Chase, A. I. A.

Architect

Public and Commercial Buildings
140 Peachtree St. ATLANTA, GA.

Geo. Harwell Bond

—A-I-A—

ARCHITECT

Candler Building ATLANTA, GEORGIA

G. Lloyd Preacher & Co., Inc.

Architects and Engineers

1204 Wynne Cloughton Bldg.,
ATLANTA, GA.

Chas. T. Main, Inc.

Industrial Engineers

Mills, Warehouses, Complete Developments
Electrical, Steam and Water Power
Reports—Appraisals
201 Devonshire St. BOSTON, MASS.

Claude H. Lindsley

Architects

Member American Inst. of Architects
JACKSON, MISS.

E. S. Draper

Landscape Architect and Engineer

Fellow American Society of
Landscape Architects1516 S. 4th St., CHARLOTTE, N. C.
101 Marietta Bldg., ATLANTA, GA.

B. Russell Shaw Co.

INCORPORATED

Consulting and Designing Engineers
AIRPORTS—AIRLINES

Avenue Bldg., ST. LOUIS, MO.

James D. Lacey & Co.

Timberland Factors

Forest Engineering—Management
Aerial Surveys—Timber Reports
250 Madison Avenue, NEW YORK
231 So. La Salle St. CHICAGO
JACKSONVILLE — NEW ORLEANS

Airmap Corporation of America

Aerial Surveys and Maps
Consultants and EngineersThe AIRMAP—The Engineer's Aerial
Map for City Planning, Water
Supply Studies, Zoning,
Complete Aerial Tax Map Service
42 Flatbush Extension BROOKLYN, N. Y.

Invicta Engineering Company

Research and Development
Industrial Processes
Mechanical InventionsCompetent engineering service to plants
without engineering departments and
to individuals requiring such service.
P. O. Box 2494 BIRMINGHAM, ALA.

Ira G. Hedrick, Inc.

Mem.
A. S. C. E.

Consulting Engineer

Designs, Supervision, Estimates, Bridges
and Structural Work.
HOT SPRINGS NAT'L PARK, ARK.

Wadleigh and Bailey

Consulting Mining Engineers

Management, Investigation, Appraisal of
Mining Properties.
Fuel Consultants, Natural Resources
Surveys.
One Broadway, NEW YORK, N. Y.
Southern Bldg., WASHINGTON, D. C.

Charlton & Davis

Civil Engineers

General Engineering Practice
Local Maps for Sale

FORT LAUDERDALE, FLA.

George B. Hills Co.

Drainage, Docks and Terminals

Suite 314 Liggett Bldg.
JACKSONVILLE, FLA.

Elroy G. Smith

Consulting and Designing
Civil-Hydraulic EngineerIndustrial Hydro-Electric Development
a Specialty
212-213-A Herald Bldg.,
AUGUSTA, GA.

Consoer, Older & Quinlan, Inc.

Mems. A. S. C. E.

Consulting Engineers

Water Supply — Sewerage — Industrial
Engineering
317 N. 11th St. ST. LOUIS, MO.
205 W. Wacker Drive, CHICAGO, ILL.

Harza Engineering Co.

Consulting Engineers

Dams, Hydraulic, Hydro-electric, Flood
Control and Sanitary Projects
20 N. Wacker Drive
CHICAGO

J. E. Greiner & Company

Consulting Engineers

Design, Construction, Investigation, Adv-
isory Service—Bridges, Docks, Piers,
Warehouses and other Engineering
Structures.
1201 St. Paul St. BALTIMORE, MD.

C. A. P. Turner

Consulting Engineer

M. Am. Soc. C. E. Reinforced Concrete
and Structural Steel Bridges, Buildings,
and Manufacturing Plants.
300 Builders Exchange Bldg.,
MINNEAPOLIS, MINN.

Walter H. Wheeler

M.A.S.C.E. and M.E.

Engineers

Mfg. Plants, Buildings, Bridges, Dams,
1000 Met. Life Bldg.,
MINNEAPOLIS, MINN.

Arthur L. Mullergren

Consulting Engineer

POWER SPECIALIST

770 Board of Trade Building
KANSAS CITY, MO.

Widmer Engineering Co.

Industrial Engineers

ST. LOUIS, MO.

Fuller & McClintock

Engineers

170 Broadway, NEW YORK
Penna. Bldg., 15th and Chestnut Sts.,
PHILADELPHIA, PA.
Walsir Bldg., 600 Walnut St.,
KANSAS CITY, MO.

Charles H. Herty

Industrial Consultant

Special attention given to the location
and development of industries utilizing
the natural resources of Southern States,
especially as affected by Chemistry.
101 Park Avenue, NEW YORK CITY

William S. Lee

Mem. Am. Soc. C. E.; Mem. Am. Soc.
M. E.; Mem. Eng. Inst. Can.; Fellow
Am. Inst. E. E.

Consulting Engineer

535 Fifth Ave. NEW YORK CITY
CHARLOTTE, NORTH CAROLINA

MacElwee & Crandall, Inc.

Industrial and Civil Engineers

Investigations, Reports, Design, Super-
vision — Port Development, Piers, Ter-
minals, Airports, City Planning, Water
Front, Reclamation, Industrial Surveys
Main Office:
134 Main Street, 11 West 42d Street
CAMBRIDGE, MASS. NEW YORK CITY

Howerton Engineering Co.

Consulting and Contracting Engineers

MUNICIPAL IMPROVEMENTS
HIGHWAY IMPROVEMENTS
Water Works, Sewer, Hard Surface
Streets, Highways, Contracting Con-
struction. ASHEVILLE, N. C.

Gilbert C. White Co.

Consulting Engineers

Waterworks Paving

Sewerage

CHARLOTTE, N. C.
DURHAM, N. C.

William M. Piatt E. E. M. S.

Civil, Hydraulic and Electrical Engineer

Assistant Engineers

P. D. DAVIS W. D. LINTON
W. B. GALLAGHER, JR. H. P. REDDING
G. A. HARRIS P. A. J. RICE
FONTAINE JONES P. A. ROBERTS
D. M. WILLIAMS DURHAM, N. C.

Morris Knowles, Inc.

Engineers

Water Supply and Purification, Sewer-
age and Sewage Disposal, Valuations,
Laboratory, City Planning.

PITTSBURGH, PA.

W. E. Biggs Engineering Co.

Consulting Engineers

Power Plants and Industrial power ap-
plications. Economic use of power and
process steam.Heating and Ventilating
Design—Supervision—Operation
Holston Bank Bldg.,
KNOXVILLE, TENN.

Gardner & Howe

Structural Engineers

Steel and Reinforced Concrete Buildings,
Bridges and ViaductsPorter Bldg. MEMPHIS TENN.
Kirby Bldg. DALLAS, TEXAS

Freeland, Roberts & Co.

Consulting Engineers

Concrete and Steel Structures

NASHVILLE, TENN.

C. N. Harrub Engineering Co.

Member Am. Soc. C. E.

Civil and Sanitary Engineers

Water Supply, Sewerage, Paving and
Structural Improvements.
705-9 Fourth & First Nat'l. Bk. Bldg.
NASHVILLE, TENN.

Engineering Service Corp.

Consulting Engineers

Civil-Electrical-Mechanical-Refrigeration
COLD and DRY STORAGE WAREHOUSES
DESIGNS
Reports—Appraisals—Designs—Surveys
Docks and Harbor Designs—Ind. Engr.
Water Sup.—Sewer Sys.—Oil and Gas Lines
HOUSTON, TEXAS, U. S. A.

Lee H. Williamson

MEM. AM. SOC. C. E.

Consulting Engineer

CHARLOTTESVILLE, VA.

Algernon Blair

Contractor

MONTGOMERY, ALA.

Hornbuckle Contracting Co.

INCORPORATED

Municipal Improvements
Industrial Village Utilities

ATLANTA, GA.

S. P. Rees

Contracting Engineer

Municipal—Industrial—Swimming Pool
Gravity and Pressure Filter and
Softening Plants
137 Huntington Road ATLANTA, GA.

S. E. Huey

Consulting Engineer

Natural Gas

Ouchita Bank Bldg. MONROE, LA.

Kansas City Bridge Co.

Established 1893

Builders of Railroad and
Highway Bridges
River Improvement Work
General Office, 1012 Baltimore Ave.,
KANSAS CITY, MO.

T. C. Thompson and Bros.

Incorporated 1895

General Contractors and Builders

BIRMINGHAM, ALA.

CHARLOTTE, N. C.

Angle-Blackford Company

General Contractors

GREENSBORO, N. C.

Fiske Carter Construction Co.

General Contractors

GREENVILLE, S. C.

SPARTANBURG, S. C.

Poe Piping & Heating Co.

Contractors

For Power Piping, Heating and
Sprinkler System
108 S. Main St. GREENVILLE, S. C.

Lee A. Gridley Construction Co.

General Construction

CRANE SERVICE—FOUNDATIONS
KNOXVILLE, TENN.FAMILIARIZE yourself
with the SOUTH'S pro-
gress by reading the MANU-
FACTURERS RECORD.

Charleston Constructors, Inc.

H. C. Chevas, Jr., President
J. A. McCormack, Secy. & Treas.
C. M. Trott, Engineer
58 Broad Street
Phone 3462 CHARLESTON, S. C.

Steel & Lebbey

JOHN A. STEEL, JR.
THOS. D. LEBBEY
Engineers and Constructors
The design and erection of concrete and steel structures.
Holston Bank Building
KNOXVILLE, TENN.

The Warner Service Company

Electrical and Mechanical
Contractors
Cor. Clinch and Central Ave.
KNOXVILLE, TENN.

Charles W. Alpaugh & Sons

Hydraulic and Construction Engineers
Dams a Specialty: Investigations,
Estimates Free.
MANASSAS, VA.

The John W. Cowper Co., Inc.

General Contractors
State Planters Bank Bldg.
RICHMOND, VA.

Floyd Jennings & Co., Inc.

Plastering Contractors
132 Cain St., N. E. ATLANTA, GA.

Walker Electrical Company

Electrical Contractors
General Offices: ATLANTA, GA.
Sales Offices:
ATLANTA, GA. COLUMBUS, GA.
GREENSBORO, N. C.

Hoosier Engineering Co.

Erectors of Transmission Lines and
Substations
100 W. Monroe St. CHICAGO, ILL.

John Eichleay, Jr. Co.

Steel Construction
Structural Steel
House Raising and Moving
Shoring and Foundation Work
South 20th & Wharton Sts.
PITTSBURGH, PA.

J. B. Converse & Co., Inc.

Engineer
Industrial Investigations, reports,
plans, estimates, supervision.
MOBILE, ALA.

William Henry Harrison

Engineer
Tax Valuations, Commercial Appraisals,
and Analytical Reports.
Denrike Bldg. WASHINGTON, D. C.

The Picard Laboratories

Chemists and Inspecting Engineers
Inspection of Cast Iron Pipe, Structural
Steel, Cement, Railroad Equipment, etc.
Chemical Analysis of all kinds.
Representation in all Principal Offices
Clark Building. BIRMINGHAM, ALA.

Conard & Buzby

W. B. CONARD J. S. BUZBY
Inspection and Tests of Materials of
Engineering and Construction
Reports, Designs, Supervision
Construction
BURLINGTON, N. J.

Wiley & Company, Inc.

Analytical and Consulting Chemists—
Experts on Fertilizer Materials, Coal,
Greases, Food, Drugs, Dairy Products,
Chemical and Bacteriological Examina-
tions of Water for Domestic and Manu-
facturing Processes.
Calvert and Read Sts. BALTO., MD.

Dow & Smith

A. W. Dow, Ph.D.; F. P. Smith, Ph.D.
Mem. Am. Inst. Ch. Engrs.
Mem. Am. Soc. Civ. Engrs.
Chemical Engineers, Consulting Paving
Engineers, Asphalts, Bitumens, Cement,
Paving Materials
151 East 23rd St. NEW YORK

Stillman & Van Siclen, Inc.

Chemists and Chemical Engineers
Analysis and Inspection of Asphalt,
Paving Materials, Cement, Concrete
Building Materials.
227 Front Street NEW YORK
BEECKMAN 5261

Barrow-Agee Laboratories, Inc.

Chemists and Engineers
Analysis tests and inspection of all
building and construction materials.
MEMPHIS, TENN.
LITTLE ROCK, ARK.
JACKSON, MISS. SHREVEPORT, LA.

E. T. Le Baron, C. P. A.

General Practice.
314 Dyal-Upchurch Building
JACKSONVILLE, FLORIDA

The J. B. McCrary Company

Engineers

ATLANTA

GEORGIA

MUNICIPAL IMPROVEMENTS

We design and construct Water-Works, Electric-light and Sewer Systems—Paving
and Road Work.

James W. Billingsley

Consulting Engineers

Investigations—Plans—Specifications and Supervision
Industrial Plants—Docks—Seawalls—Roads—Bridges and Municipal Work.
NEW ORLEANS, LA.

Spoon & Lewis

Consulting Engineers

Associates

Fay, Spofford & Thorndike

Consulting Engineers

Water Works, Sewerage Works, Streets, Bridges, Industrial Plants,
Highways, City and Land Development, Port Development, Harbor Works,
Investigations—Designs—Supervision of Construction
GREENSBORO, N. C. BOSTON, MASS.

SANDERSON & PORTER

ENGINEERS

FOR THE

FINANCING—REORGANIZATION—

DESIGN—CONSTRUCTION

OF

INDUSTRIALS and PUBLIC UTILITIES

CHICAGO

NEW YORK

SAN FRANCISCO

The J. G. White Engineering Corporation

Engineers—Constructors

43 Exchange Place

NEW YORK

Mees & Mees, Inc.

Engineers and Industrial Architects

Reports, Designs, Supervision of Construction, Appraisals,
DAMS—POWER PLANT—MUNICIPAL IMPROVEMENTS
INDUSTRIAL PLANTS

616 Johnston Building

CHARLOTTE, N. C.

Scofield Engineering Company

Consulting Engineers

POWER AND INDUSTRIAL PLANTS AND PROCESSES.
Design—Construction—Valuations.

Commercial Trust Bldg.,

PHILADELPHIA

J. E. Sirrine & Company

Engineers

Factory Design: Hydro- and Steam-Electric Plants; Warehouses,
Steam Utilization, Sewage Systems, Appraisals, Valuations, Reports.

General Offices: GREENVILLE, SOUTH CAROLINA

Floyd & Lochridge

Consulting Engineers

Hydraulic Investigations, Water Supply, Irrigation, Flood Control, Drainage
Dams, and Power Development.
Investigations for Financial Institutions.

Wilson Building

DALLAS, TEX.

Wiley & Wilson,

Consulting Engineers

PLANS, SPECIFICATIONS AND SUPERVISIONS
STEAM AND ELECTRIC POWER PLANTS
STEAM HEATING AND VENTILATING SYSTEMS
Complete Mechanical and Electrical Equipment for Public and Private Buildings
and for Institutional Groups.
MAIN OFFICE: LYNCHBURG, VA. BRANCH OFFICE: RICHMOND, VA.

Tucker & Laxton

Contracting Engineers

Filters, Concrete Work, Hydro-Electric and Steam Electric Construction.

CHARLOTTE, NORTH CAROLINA

Ford, Bacon & Davis

Incorporated

Engineers

39 Broadway, New York

Philadelphia

Chicago

San Francisco

Wiedeman and Singleton, Inc.

(Successors to Paul H. Norcross)

Consulting Engineers

WATER WORKS, SEWERS, SEWAGE DISPOSAL
APPRAISALS, VALUATIONS, REPORTS

Candler Building

ATLANTA, GA.

Hardaway Contracting Company

Engineers

Contractors

Water Power Developments, Bridges

COLUMBUS, GEORGIA.

Byllesby Engineering & Management Corporation

231 S. La Salle Street

CHICAGO

NEW YORK

SAN FRANCISCO

Batthey & Kipp

Incorporated

Consulting and Constructing Engineers

Industrial Plants

Power Plants

Railroad Shops, Terminals and Electrification

231 S. La Salle Street

CHICAGO, ILL.



Lockwood Greene Engineers, Inc.

*Plans—Specifications—Reports—
Appraisals—for Industrial Plants*

NEW YORK BOSTON CHICAGO CLEVELAND
CHARLOTTE SPARTANBURG

Cornell-Young Company

Incorporated

General Contractors

Railroads and Highways, Reinforced Concrete and Steam Shovel Work.
704 Georgia Casualty Bldg. MACON, GEORGIA.

Frederick Snare Corporation

Contracting Engineers

Difficult Foundations and Engineering Problems a Specialty

114 Liberty Street
New York

PHILADELPHIA

HAVANA

Webb Electric Company

Electrical Contractors

Industrial, Commercial and Institutional
Electrical Installations.

ANDERSON, S. C.

Allen J. Saville, Inc.

ENGINEERING AND CONSTRUCTION

Electric Building

RICHMOND, VIRGINIA

Dixie Electro Plating Co.

RUST PROOFING ENGINEERS AND CONTRACTORS
UDYLITE PROCESS

PLANT CAPACITY PRACTICALLY UNLIMITED

Office and Plant

217 Caroline Street

HOUSTON, TEXAS

B. Stanley Simmons, Inc. and Associates

A. I. A.

Architects

PUBLIC AND COMMERCIAL BUILDINGS

1315 H Street, N. W.

WASHINGTON, D. C.

NEW YORK OFFICE: Fifth Ave at 47th Street

The Ballinger Company

Architects Engineers Appraisers

Commercial, Industrial and Institutional Buildings

PHILADELPHIA

NEW YORK

W.E. Rowan

QUANTITY SURVEYS

215 Builders Building

CHARLOTTE, N. C.

Hollowell, Gorham & Company

Auditors, Accountants, Industrial Engineers

COST SYSTEMS—AUDITS—TAX SERVICE

Special Investigations for Consolidations, Reorganizations, etc.
GREENSBORO, N. C. ROCKY MOUNT, N. C.

Tilghman Moyer Company

Bank Architects and Builders

ALLENTOWN

PENNSYLVANIA

Dame-Wolfe & Co.

INDUSTRIAL SURVEYS—FINANCING—
MANAGEMENT

815 15th St., N. W.

WASHINGTON, D. C.

Robert W. Hunt Company

ENGINEERS

Inspection—Tests—Consultation

22nd FLOOR INSURANCE EXCHANGE, CHICAGO

Laboratories and Offices in all Large Cities

Walter H. Flood & Co.

Chemical Engineers

Inspection and Tests

Paving and Engineering Materials

Plant and street inspection on all types of pavements.
932 E. 44th St., CHICAGO, ILL.

Reports, specifications, consultation.
321 Daniel Building JACKSON, MISS.

Pittsburgh Testing Laboratory

ANALYSIS INSPECTION TESTING RESEARCH

PITTSBURGH, PA.

Branch Offices in the Principal Cities

Established 1881

Froehling and Robertson, Inc.

Inspection Engineers and Chemists

Inspection of Cement, Steel, Pipe, Timber, Brick, Tile
Design and control of Asphalt and Concrete Mixtures.

Water Analysis, a Specialty.

ATLANTA

BALTIMORE

NEW YORK

RICHMOND

Southwestern Laboratories

Chemical and Testing Engineers

Inspection Steel and Cement for Bridges and Buildings. Crossed Timber, Asphalt, Brick, Cast Iron Pipe, Railroad Equipment, Bituminous Pavement at Plant, Chemical Analyses, Etc. Representation at usual points of origin.
FORT WORTH DALLAS HOUSTON AMARILLO

Courtenay De Kalb

Mining Engineer and Economic Geologist

Reports on Mineral Products

Design and Advice on Treatment Plants for Ores and Non-Metallic Products
15 Gramercy Park NEW YORK, N. Y.

Sprague & Henwood, Inc.

Core and Wash Borings

For Buildings, Bridges, Dams and all kinds of Minerals

Anywhere in the United States or Canada

Main Office

SCRANTON, PENNA.

Mott Core Drilling Company

Diamond Core Drill Contractors

We Test Coal, Clays, and Mineral Properties, Foundation Testing, Dams, Bridges, Buildings, Wash Borings, Dry Samples.

MAIN OFFICE

HUNTINGTON, W. VA.

IF you wish to keep posted on the progress of the South, read the MANUFACTURERS RECORD.

SEAWALLS WEBER SYSTEM
MANY DIFFERENT TYPES TO MEET EVERY CONDITION.
SAFEST AND MOST PERMANENT CONSTRUCTION.
ENORMOUS SAVING OF COST
FOR COMPLETE INFORMATION WRITE TO:
SHORE-LINE BUILDERS, INC.
JACKSONVILLE, FLORIDA.
WEBER SYSTEM **BULKHEADS**



WE LOOK INTO THE EARTH

By use of Diamond Core Drills

We test foundations for buildings, bridges and dams. We prospect coal and mineral lands in any part of North and South America.

PENNSYLVANIA DRILLING CO.

1812 West Carson St., Pittsburgh, Pa.

Drilling Contractors



"Modernization" — Profit's Fountain of Youth



FOR industry also "youth is not a thing of supple knees," but the faculty of meeting the new order with new methods and new devices for better production—at a profit.

In your plant also, profit will be earned in proportion to its modernization in methods as well as machines.

It is a subject of huge importance which deserves examination. Perhaps we can assist you with facts out of successful experience.

J. E. SIRRINE & COMPANY

Engineers

Greenville

South Carolina



CENTRAL OF GEORGIA RAILWAY COMPANY
OFFICE OF PRESIDENT

A. E. CLIFT
PRESIDENT

SAVANNAH GA.

Manufacturers Record,
Baltimore, Maryland.

Gentlemen:

The South has undeniable resources of raw material, labor, fuel and power supply; undeniable advantages of climate, transportation and enlightened public opinion. As these opportunities have become recognized, this section has made amazing progress, but any student of the economic situation in America must have the conviction that the development of the past is merely a forerunner of greater development to come.

In all of this the MANUFACTURERS RECORD has been a potent factor. Its part has been to educate and to stimulate, to inform those who do not know the facts, to inspire those who do know.

This you have accomplished through

- (1) The vigor, sincerity and enthusiasm of your editorial utterances.
- (2) The sound foundation of fact upon which the above are based.
- (3) The wealth of valuable and accurate information in your news columns.
- (4) The consistency and continuity of your policy.

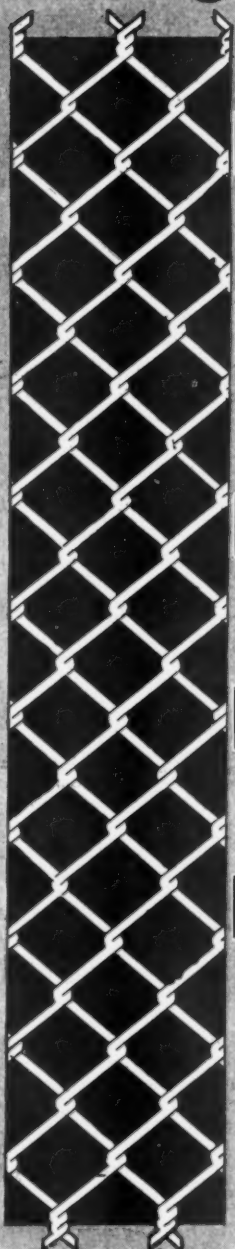
With sincere appreciation of what you have been able to do, and with best wishes for continued success of the RECORD, I am

Very truly yours,

A. E. Clift
President.

ANCHOR FENCES

GIVE YOU



FIRE PREVENTION

THEFT STOPPAGE

YARD STORAGE

ACCIDENT PREVENTION

PERSONNEL CONTROL

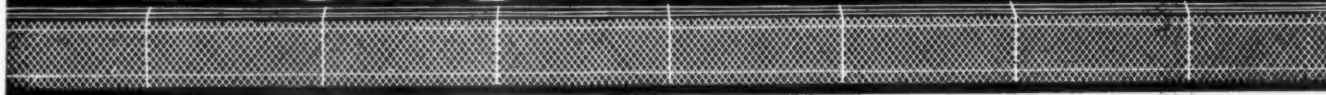
WHAT BETTER INVESTMENT COULD YOU MAKE ?

ANCHOR POST FENCE COMPANY

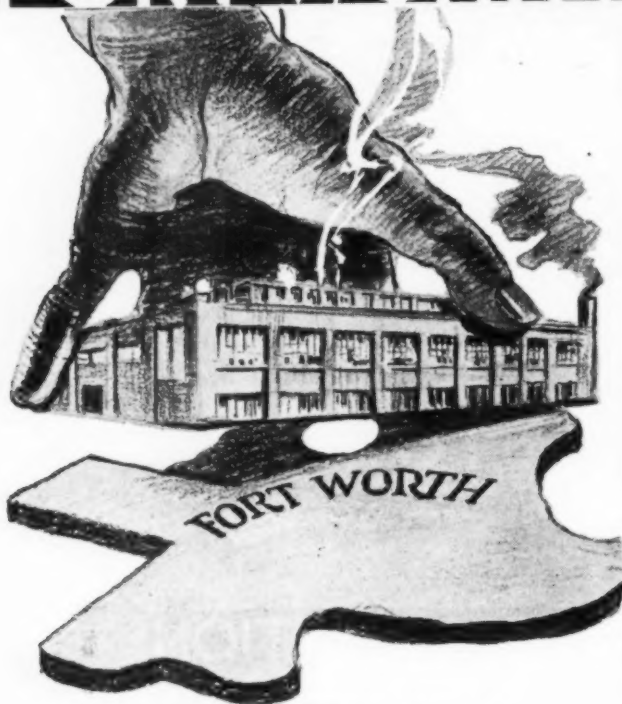
Eastern Ave. and Kane St., Baltimore, Md.

Sales Offices in all
principal cities

ANCHOR FENCES



PLANT YOUR FACTORY IN FORT WORTH



FORT WORTH Materials— —Market YOUR point of contact

The outstanding manufacturing and transportation centre of the Southwest offers you the ideal location for the concentration of materials and the distribution of products.

New industries are looking to Fort Worth for location and expansion.

No section of the United States is developing more rapidly and in none is there as rapidly growing consumption for manufactured products of every description.

Fifty per cent of the "freight haul" in manufactured products shipped into Fort Worth can be turned into profit.

The population of the great southwest has increased by more than 110 per cent since 1900.

The population of West Texas, of which Fort Worth is the gateway, has more than doubled in the last 10 years. West Texas is the "raw materials capital of the world."

The wise manufacturer will give Fort Worth very careful consideration in his future plans.

Industrial surveys and engineering reports based on careful and unbiased research will be gladly supplied.

11 TRUNK LINES



FORT WORTH

THE MANUFACTURING AND TRANSPORTATION
CENTRE OF THE SOUTHWEST

19 RAIL OUTLETS

For Information, Address Publicity Department
CHAMBER OF COMMERCE, FORT WORTH, TEXAS

FLORIDA

*Vegetable Growers
Benefit by*

NEW TARIFF RATES

The increased rates protect our growers in their competition with foreign grown products.

Plans for the 1930-31 early vegetable crops should be made now.

In the trucking section of the lower East Coast of Florida the Model Land Company of the Flagler System has several thousand acres of vegetable land for sale or rent at reasonable prices.

Write for information

Address:

J. W. Hoffman, Vice-Pres.,
Model Land Co.—Flagler System
St. Augustine, Florida

The late Henry M. Flagler and his organizations have served Florida since 1886.

Kaolin and Refractory Clays in Georgia

The refractory clay and kaolin belt of Georgia extends from Augusta to Columbus, covering an area of approximately 10,000 square miles. These deposits are the largest in the Eastern section of the country.

The Central of Georgia Railway has made a comprehensive survey of these resources and can supply information concerning them or the manufacture of clay products.

Write for any or all of these bulletins:

Utilization of Georgia Kaolins for Refractories
Kaolin and Refractory Clay Deposits in Wilkinson County, Georgia
Washing Tests of Georgia Clays
Georgia Clay for Paper Fillers
Georgia Clays for Rubber Fillers

Use of Sedimentary Kaolins of Georgia in Whitewares

Distribution of Kaolin and Bauxite of the Coastal Plain of Georgia

Directory of Commercial Minerals in Georgia and Alabama Along Central of Georgia Railway

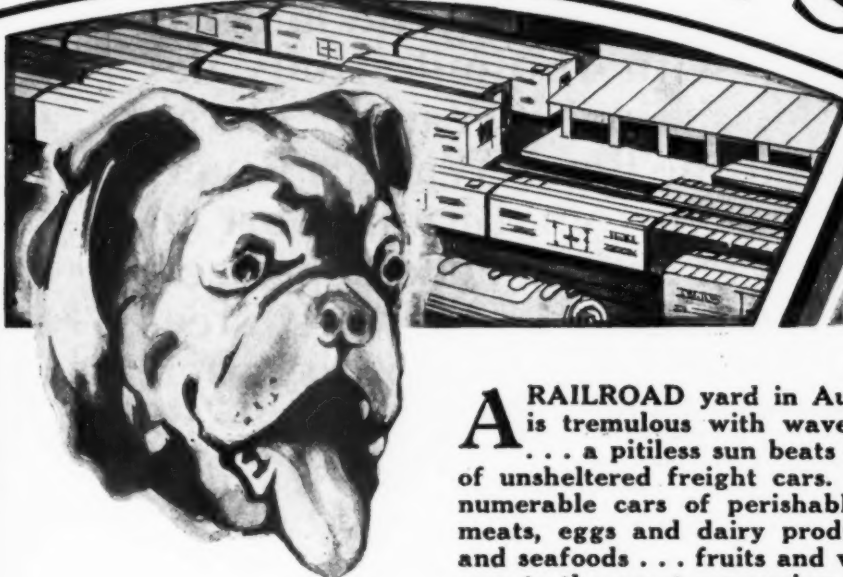
Central of Georgia Railway

Industrial Department

J. M. Mallory
General Industrial Agent

413 West Liberty St.
Savannah, Ga.

DOG DAYS



A RAILROAD yard in August. The stifling air is tremulous with waves of shimmering heat . . . a pitiless sun beats down on shifting rows of unsheltered freight cars. Among them are innumerable cars of perishable food products . . . meats, eggs and dairy products . . . poultry, fish and seafoods . . . fruits and vegetables . . . on their way to the great consuming centers.

But for the modern, sanitary refrigerator car with its thick, insulated walls and capacious ice compartments . . . but for adequate icing stations enroute and the fast, dependable service of the American railroads, these necessities could not move . . . and the summer months would indeed be lean ones.

Your nearest Norfolk and Western Freight Traffic Department representative will gladly give more specific information on this, or on the railroad's many other modern facilities and services.

Among the modern facilities of the Norfolk and Western Railway are eleven icing stations at strategic points. The largest, with efficient time-saving machinery and flood lights for night icing, are at Roanoke, Va., and Portsmouth, Ohio. At both points cars can be re-iced in from three to five minutes and initial icings require but from eight to ten minutes. At Columbus, Ohio, Cincinnati (Clare), Bluefield, W. Va., Bristol, Va.-Tenn., Crewe, Va., Petersburg, Norfolk, Norton and Hagerstown, Md., are smaller, completely equipped icing stations. At Clare, Bluefield and Crewe the stations are equipped with motor-driven chain conveyors and equipment for crushing the ice used in re-icing fresh meats and packing house products.

**Norfolk
and Western
Railway**
Roanoke ~ Virginia

Alabama

has a total of approximately 1,488 miles of navigable rivers with 460 miles fully developed. The Mississippi - Warrior Barge Line, operated on the Black Warrior River, serves the territory from Birmingham to Mobile. This barge line is a Federal project, its equipment consisting of 53 covered steel barges with 500 - ton freight capacity each and five shallow draft river tugs, capable of handling seven barges each. This line handles approximately 1,400,000 tons annually. The Mobile and Alabama rivers are 366 miles long from Mobile to Wetumpka. This waterway extends through cotton-growing territory and reaches the cities of Montgomery and Selma. The Burke Packet Line gives weekly service from Mobile to Selma. The 192 navigable miles of the Tennessee River have operating on it the St. Louis and Tennessee River Packet Company and the Tennessee River Navigation Company. Surveys are under way for further extension of the waterways system, particularly over the Coosa - Alabama from Rome, Ga., and Gadsden, to Mobile.

This is an extract from a comprehensive survey of Alabama made by the Alabama Industrial Development Board. Copies of this survey will be furnished responsible individuals upon request. Address: Alabama Industrial Development Board, Brown-Marx Building, Birmingham, Ala.

This advertisement published through the courtesy of the Alabama Power Company, whose New Industries Division is actively cooperating with the Alabama Industrial Development Board in bringing new industries to Alabama.



The Handwriting On The Wall

No single producing center can dominate the furniture business any more. The new retailing methods demand branch plants. The demand for "store-door" delivery is bred of the discovery that the closer the factory, the more money can be made on its goods. Turnover, in short, now rules the purchase.

Not so many years ago branch plants would have been difficult. Hand workers are hard to train, and you were anchored to the region where they lived. But today you can move your machines, a skeleton crew—and set up a branch plant in any section where demand warrants, and where producing conditions are good.

And the greatest of these is Georgia. Here the wood, the workers and the vital production economies all meet to cut costs, to

increase net profit from operation. Here transportation puts the rich Southern market at your fingertips, and enables you to serve the retailer as he demands to be served today.

The Industrial Department of the Georgia Power Company has made a thorough study of your needs, and is ready to point out locations where your exact requirements can be most exactly met. This valuable service is rendered gladly, and without obligation. It is available to any interested executive who will write our New York office, care The Commonwealth & Southern Corporation, 20 Pine street, or direct to the home office, Electric building, Atlanta, Georgia.

GEORGIA
POWER  COMPANY

INDUSTRY PROSPERS IN GEORGIA

HAMMOND

STEEL STACK DESIGN

*Withstands Wind Pressure
of 175 MILES PER HOUR*



Manufacturers
of
Steel Tanks
Self Supporting
Steel Stacks
Breeching
etc.

Self Supporting
Steel Stack
11 ft. 6 in. Dia.,
200 ft. High
Erected at
Central Coloso,
Porto Rico.

HAMMOND IRON WORKS
WARREN,
PENNA.

New York Office:
17 Battery Place

Tel.: Whitehall 0060.

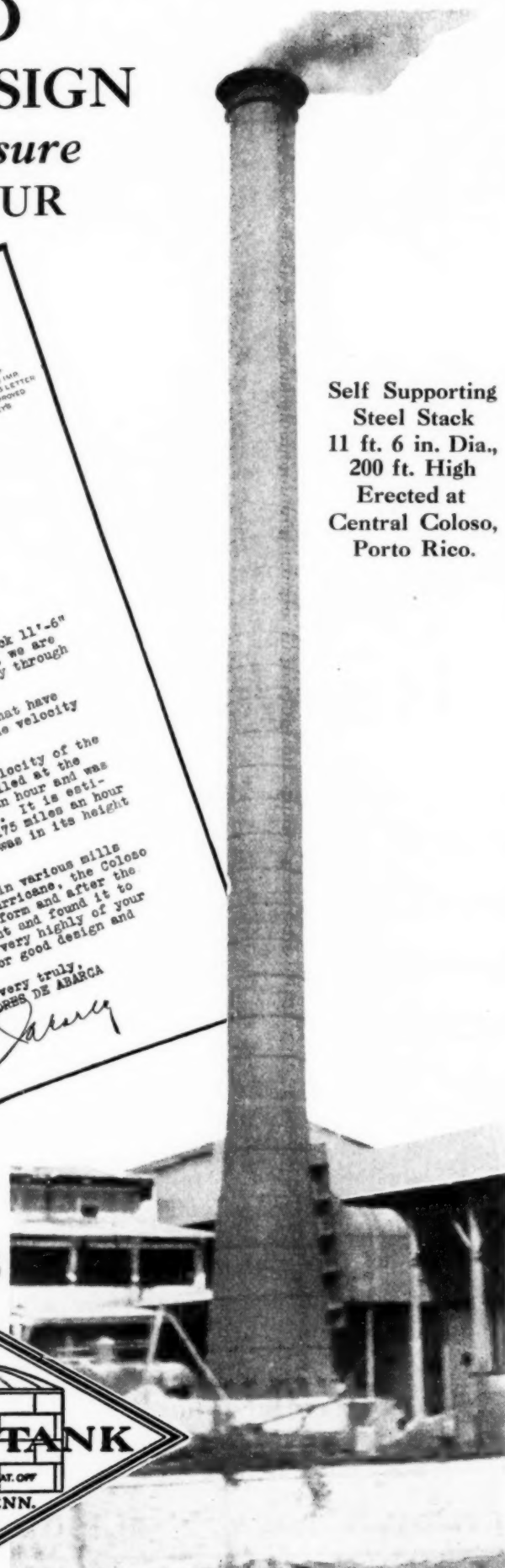


TABLE OF CONTENTS

Baltimore, Md., August 14, 1930

EDITORIALS

Encouraging Business News	Cover Page
Chemical Industries Destined for Coastal Plains, Based on Agricultural Raw Materials	47
Imagination Challenges Construction Industry	48
No Place for Billboards	48
Interstate Commerce Commission's Power Absolute	49
Government Should Pay Local Taxes	49
Gain in Savings Building Up Purchasing Power	50
Creating Employment	50
"Re-Establish the Constitution"	50

NEWS and FEATURE ARTICLES

Construction Contracts Let in South During July Third Highest Month Recorded ..	51
Lifting the South's Industrial Load by Labor Saving Machinery	53
The Unjustified Apple Embargo	By George E. Petley 58
Railroad Consolidation Discussed	By R. V. Taylor 59
"A Labor Policy for the South"	By Magnus W. Alexander 61
Commercial Cotton Crop of the United States	By Henry G. Hester 62
Contracts Awarded on \$20,000,000 Pipeline in the Southwest	63
Suggestion to Southern Pecan Growers on How to Expand Their Market	64
Harlingen Built on the Citrus Industry	By Howard Barrett 64
Communists Organize Against the South	65
Bids on \$1,000,000 Courthouse in Beaumont, Texas	65
Houston's New Port Tonnage Record	65
Airport at Muskogee, Oklahoma	67
300 New Coaches for Greyhound Lines	68

SPECIAL DEPARTMENTS

Construction, New Industries and Contracts, 16 Pages Beginning on Page 70

Iron, Steel and Metal Market	66	Machinery, Proposals and Supplies Wanted ..	83
Aviation, Airports and Airways	67	Industrial News of Interest	84
Highways and Motor Transport	68	Trade Literature	85
New and Improved Equipment	69	Financial News	88

<i>Classified Reference for Buyers</i>	<i>107</i>
<i>Alphabetical Index to Advertisers</i>	<i>121</i>

MANUFACTURERS RECORD

RICHARD H. EDMONDS, Editor

MAIN OFFICE
Manufacturers Record Building,
Commerce and Water Streets,
Baltimore, Md.

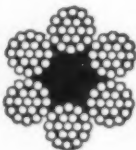
Published Every Thursday
by the
MANUFACTURERS RECORD
PUBLISHING CO.

BRANCH OFFICES
Chicago—11 S. LaSalle St.
New York—901 Singer Bldg.

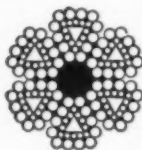
Subscription Rates: \$6.50 a year (in advance); six months, \$3.50; three months, \$2.00 to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. For Canada add postage \$1.00 a year. For other foreign countries add postage \$3.50 a year.

PUBLISHERS DAILY CONSTRUCTION BULLETIN AND BLUE BOOK OF SOUTHERN PROGRESS
Member A.B.C.

"LESCHEN" WIRE ROPE



Leschen Wire Rope is made in various grades and in numerous constructions in order to meet all conditions. Tell us how you use wire rope and we shall be glad to suggest the kind that will give you the best results.



Established 1857

A. LESCHEN & SONS ROPE COMPANY

5909 Kennerly Avenue
ST. LOUIS

New York

Chicago

Denver

San Francisco



Patent Applied for

COOK DEEP-WELL TURBINE

SELF-OILING-WEATHERPROOF

This is the Pump YOU have been hoping for - - -

Poolproof — Trouble-proof

Compact

Sturdy

Efficient

Adaptable

BULLETIN — 36

A. D. COOK, Inc.

Lawrenceburg—Indiana

LEADITE

Trade Mark Registered U.S. Pat. Office

For Jointing Cast-Iron Water Mains
Saves at Least 75%

Leadite Tested and Used for Over 30 Years

Leadite Joints Improve with Age

The Leadite Co., Land Title Bldg., Philadelphia, Pa.

"See our Full Page Ad in 2nd issue each month"

No Caulking

FREIGHT RATES

(One of the Most Important Factors in Industrial Development)

ARE YOU RIGHT?

A Service Definitely in Cooperation with your own Traffic Department. Consultation Involves no Obligation.

CHAS. S. ALLEN

FREIGHT RATE ADJUSTMENTS

Room 1703, 230 Park Avenue New York, N. Y.

Phone: Vanderbilt 6886.

BRADEN

SECTIONAL STEEL BUILDINGS

ARE intended for many different uses. Time after time, they may be dismantled, moved and set up again without appreciable damage. You may take out part of the building in order to shorten it, or add to it at will. Take part of the sides and roof of different buildings of the same size, add two new ends, and you have a complete building. Doors and windows may be easily moved by simply shifting the entire section without damaging any material. And they are built for permanence.



Braden Steel Corp.

Tulsa,

Okla.



Manufacturers Record

Reg. U. S. Pat. Off.

Devoted to the Upbuilding of the Nation Through the Development
of the South and Southwest as the Nation's Greatest Material Asset

Vol. XCVIII No. 7
Weekly

BALTIMORE, AUGUST 14, 1930

{ Single Copies, 20 Cents.
\$6.50 a Year.

Chemical Industries Destined for Coastal Plains, Based on Agricultural Raw Materials

OCCASIONAL announcements of new developments in the application of chemistry to the products of Southern soil indicate clearly that the destiny of the great coastal plains region is to provide agricultural raw materials for enormous chemical industries; and to do it on a scale that, before many more years, will profoundly alter the economic conditions of the whole region.

The Piedmont section is rich in minerals, and while agriculture will continue to develop there along appropriate lines, diversified manufactures will more and more be characteristic of the Piedmont. Very different will be the characteristic development of the plains lying between the Piedmont Plateau and the Atlantic and Gulf Coasts. Here great chemical industries, drawing their raw materials from agricultural production, promise to constitute an ever larger part of the industrial scheme.

Cotton seed and cotton linters as raw materials for two very complex groups of chemical industries are well known; but the progress of chemical research is constantly expanding the industries built on the cotton boll's contents, the latest find being the sugar xylose, and the discovery that it can be easily converted into important commercial acids now imported into this country. What all this may lead to remains to be seen.

Thomas A. Edison's reported discovery of a practical method for making rubber from goldenrod seems to forecast an entirely new plantation industry. Mr. Edison's investigators have found a species of goldenrod that grows to a height of 15 or 16 feet. The rubber, or rubber-making material, occurs just under the bark and in the pith. It is, therefore, necessary to separate the hard, woody fibre of the stem from the bark and pith; and the process by which this is done reduces the fibre to a pulp which, it has been suggested, may prove valuable in paper-making. Henry Ford has bought a large tract of land near Savannah on which, it is conjectured, he proposes to raise goldenrod for rubber making. Whether or not that is the object of his purchase, Mr. Edison's optimistic predictions are

based on years of intensive research, and must be given considerable weight. The cultivation of goldenrod on a large scale in the Coastal Plains would take up much land now unproductive and would employ thousands of men, without taking into account the men needed to operate the plants in which the rubber would be extracted. Here may be found a partial solution of the problem created by an agricultural surplus, for much land now being planted to other crops might be used for goldenrod. Incidentally, the name that now refers only to the blossom may come to have a very different significance as applied to the rod-like stem of the weed.

Another of the great agricultural raw materials for the chemical industry—naval stores—has been much discussed in these pages, and in fact, is not only the oldest chemical industry in the South, but one of the oldest industries of the continent. Chipping the pine trees for their valuable gum was started in North Carolina by some of the earliest settlers, and from there spread south and west. But that industry also, like those using cotton seed, is in a state of flux. It has often been remarked in the last half dozen years that the naval stores industry is being forced by exhaustion of the forests to give up its traditional nomadic existence and settle down, farmer-like, to cultivate the pine trees upon which it depends.

A meagrely-financed campaign of research on the rosin and turpentine has recently been strengthened by the pledge of an additional \$30,000 yearly from the American Turpentine Farmers Association, while a newly-organized turpentine-producers cooperative selling organization has 700 members who account for over 60 per cent of the total domestic production. Great pine plantations, chipped for a number of years for their gum and cut in rotation for pulp wood or lumber, will take up additional hundreds of thousands of acres. Turpentine stills and refineries, paper mills using pulp from pine, and lumber mills are a reality in the South today; and the growth of scientific forestry forecasts a day when cutover lands will be scarce and idle lands almost non-existent.

Naval stores, pulpwood and lumber, however, are

merely three products of what may well develop into a tremendous group of allied industries, all built upon the cellulose molecule of the pine. Already 60 per cent of our rayon is made of wood pulp cellulose, and the tendency is to increase the ratio in favor of wood. However, cotton is the other source of cellulose for rayon, and as far as the Coastal Plain is concerned, it will furnish the bulk of this cellulose either way. Dr. Charles H. Herty has often pointed out that while this age is increasingly depending upon cellulose as a raw material, progress in its use is slow and halting because the structure of the cellulose molecule has never been determined. Once it is understood, he asserts, the magnitude of the cellulose-using industries as a group will soon dwarf present proportions. And the pine forests of the Coastal Plain are the premier source of cellulose.

Further south, where pines begin to leave off, in Florida and in Texas, the canning of grapefruit hearts, grapefruit and orange juice, may be expected to grow far beyond the already considerable proportions of today. Grapefruit hearts worth upwards of \$10,000,000 in retail prices were canned the past season. While this is not a chemical industry in the sense of naval stores, in one sense it definitely is a chemical industry; for like all canning, the methods used are carefully worked out with the aid of chemical research. And in South Carolina the discovery of the high iodine content of its vegetables is resulting in increased interest in the development of vegetable canning plants.

The manufacture of sugar, and of wallboard from bagasse, likewise are plantation industries; and while the latter is not exactly a chemical industry, the former certainly is. The introduction of P. O. J. cane into Louisiana and Florida, and the recent increase in tariff rates are important factors in the development of these plantation industries of the Coastal Plains and in their future growth, and are further reasons why the South is beginning more fully to appreciate the value of tariff protection on its products whether of the soil or the factory.

Imagination Challenges Construction Industry

ATTENTION was directed to the constructive and cooperative work for the structural steel industry by the American Institute of Steel Construction, through the medium of an advertisement in the MANUFACTURERS RECORD of July 31. The unique "airport of the future" pictured by the imagination of Hugh Ferriss may or may not materialize into reality, but in either event it was of genuine interest and was a valuable contribution by the Institute to the steel construction and other industries.

That low man seeks a little thing to do, sees it and does it. This high man, with a great thing to pursue, dies ere he knows it.—*Browning*.

No Place for Billboards

WHETHER the billboards which make highway routes always unsightly and very frequently dangerous are to be discontinued voluntarily or through compulsion, the country is evidently reaching the conclusion that these signboards must go. Indications show that the movement for their discontinuance is becoming nation wide in volume.

Virginia, for instance, will remove billboards which "interfere in any manner with the safety of travel." In New Jersey, a recent law imposes a heavy tax on billboards, with close restrictions as to where they may be placed. Considerations of safety and of scenic beauty, the American Automobile Association finds, "are gradually forcing a recognition of the fact that signboards must be subject to constructive legislation." Canada appears to have abolished the billboard, and France plans virtually to tax them out of existence in that country.

From a table in Great Markets of America, giving the allotment and cost of 24-sheet poster service in cities and towns of the New York trading area, it might seem that the billboard industry could stand quite a pressure of taxation without succumbing. For Manhattan and The Bronx, it appears that a "24-sheet intensive, full showing," costs \$7000 a month; for Brooklyn, \$4048 a month; in the Peekskill district, 38,000 population, \$327.20; in towns of 370, or 700 or 870 population, the cost for that type is \$7.80 a month, and in towns around 1000 or 1500 it is set at \$15.60. In New Jersey, in the Newark trade district, the cost is \$3440 a month; in the Perth Amboy and Plainfield areas, each, \$1012; the Summit district, 32,400 population, \$303.60 a month, and so on.

The "minimum showing and cost of 3-sheet poster service in the New York trading area" include the following: Manhattan and The Bronx, \$1050 a month; Brooklyn, \$875 a month; Long Island district, \$700; Norwalk, Conn., district, 34,800 population, \$48; Newark, N. J., district, \$420; Perth Amboy and Plainfield districts, about 76,000 population in each, \$84 a month, with scores of other districts also tabulated.

Apparently, also, the business is scientifically arranged, so many billboards, of varying sizes, being allotted to each district on the basis of population. Blauvelt, N. Y., with 370 residents, seems to have one billboard, while Manhattan, The Bronx and Brooklyn run into the hundreds, for 24-sheet and 3-sheet poster service.

Whether such an industry may be directly legislated out of existence, under the Federal and State Constitutions, is a question for the courts to determine. In the meantime, prohibitive taxation might be imposed by the states and lesser communities. The cost of unsightly and dangerous billboards is so heavy in many ways that no state or city or village can be adequately reimbursed in taxes.

The South, in particular, is no land for billboards. The scenery of the South, above all other areas, should be protected against defacement or concealment. Safety on the great Southern highways must in no way be impaired. The South should be outstanding

in leadership in the campaign for discontinuance of the billboard.

Interstate Commerce Commission's Power Absolute

FACTS amazing to the average citizen, relating to the power and authority conferred by law on the Interstate Commerce Commission, are brought to light in a profoundly thoughtful discussion by R. V. Taylor, a former member of the Commission, published in this issue of the MANUFACTURERS RECORD. The treatment of any controversial points and the arguments on any subject discussed are Mr. Taylor's.

Whether or not one believes in the principle of railroad consolidations, and particularly in enforced consolidation on lines laid down by the Commission, one may well be impressed by certain features in Mr. Taylor's article.

First, for instance, one is informed that not even the acquiescence of a rail carrier is required in the proposed consolidation. Conversely, it may be interpreted that protests will be of no legal avail.

Further, the Commission is given power "to suspend the operations of the laws of any State, and the Sherman and Clayton Federal Anti-Trust laws." Indeed, we are told, the Commission at times has gone "to the extent of setting aside decisions of the Supreme Court which had previously determined that these laws had been violated," and in one case "reversed an opinion of our court of last resort."

"With the record of this test of strength before it, the Commission never need hesitate for want of power whenever the public interest appeals to it for protection against any injury flowing from an unlawful grouping of carriers," Mr. Taylor adds.

On the other hand, some conservative minds may ponder the advisability of raising any government agency to a pinnacle from which it can look down on the Supreme Court of the United States. Nor, apparently, is there any tribunal to which a carrier or a citizen may resort to determine whether or not the Commission is acting "in the public interest," or whether any certain "grouping of carriers" is "unlawful" in its nature.

The Class 1 railroads of the United States have \$26,346,872,639 invested in the transportation industry. The people of the United States have hundreds of billions invested in industries dependent largely on rail transportation facilities. These uncounted billions appear to be placed under control of a government agency responsible only to itself.

Pending before the Senate is a Joint Resolution "to suspend the authority of the Interstate Commerce Commission to approve consolidations or unifications of railway properties." Debate on this measure may bring out still further light on a subject of prodigious importance to the transportation industry and to all the people. The MANUFACTURERS RECORD invites the comments of its readers and constructive suggestions.

Government Should Pay Local Taxes

ANNOUNCEMENT by Postmaster General Walter F. Brown that the Government will abandon its practice of leasing buildings for important post-office stations and will erect structures of its own on Government owned sites will receive general approval. Popular demand for the new policy, voiced often by the MANUFACTURERS RECORD, has been long and insistent.

In paying \$8,000,000 in rent at present on 309 important stations and garages appraised at \$75,000,000, the Government returns about 10½ per cent of the capital value of the properties to the owners each year.

"While I am not prepared to say that this is an exorbitant rental rate," Mr. Brown adds, "it is poor business from the standpoint of the Government, which is in a position to borrow money to acquire these properties, or similar ones, at an interest rate of 4 per cent per annum, and, as a real estate owner, is immune from taxation."

The manner in which the renting of postoffice properties to the Government became an established and recognized investment enterprise, engaging millions of dollars in capital, has been detailed more than once in the MANUFACTURERS RECORD. The subject became an open scandal in the recent session of the Congress and in debate a member asserted that in one case the Government was paying \$120,000 a year for property appraised at \$334,000, against which securities had been sold to a total of \$1,150,000.

"There undoubtedly have been cases where the bond issue has exceeded a fair valuation of the property," is Postmaster General Brown's comment on that and other similar instances.

The fact that the Government, as a real estate owner, is immune from taxation, which Mr. Brown mentions merely in casual and incidental fashion, is a subject which should be given profound consideration and study. In principle, it is unsound, and unfair to communities in which the Government may have property holdings.

Any city in which a Government building is situated is entitled to the same tax on such property as is paid by other property owners. The Government enjoys the same police and fire and other municipal protection that private owners enjoy. Its property may enhance somewhat the value of adjacent properties, but many private holdings also raise property values in their neighborhood, yet receive no credit in their assessments or tax bills, but indeed increases in both. There is no sound reason, in principle or in practice, to justify this Government immunity from local taxation.

The argument that the Government's local taxes, in the end, would be paid by the people at large is of no weight, in either theory or actuality, in consideration of the subject. The money paid in such taxes by the Government would be paid to the State or county or city or town to which the tax money actually would be due, and which rightfully had earned

that money from the Government as much as from any private citizen.

Mr. Brown's casual remark brings prominently to the front a subject of importance.

Gain in Savings Building Up Purchasing Power

"THE expected upturn in savings has definitely arrived," the National Association of Mutual Savings Banks announces on reports from individual banks. Deposits in mutual savings banks which hold more than 30 per cent of all savings in the banks of the United States showed a gain of \$273,766,807 for the six months ended June 30.

At the end of the half-year, the mutual savings banks had total deposits of \$9,145,891,859, "the largest accumulation of small capital ever brought together by one class of banks anywhere in the world, and total assets for the first time passed the \$10,000,000,000 mark, rising to \$10,252,675,171."

The disclosure is significant as indicating that the present lull in general buying is not due to the fact that the people have no money to spend. This trade lull in reality is based on a general notion that this is a period of hard times; whereas the hard times actually are due to this reluctance of people to spend their money.

Reasonable saving, or thrift, by the individual is a fundamental factor in national prosperity; but an estimated gain of \$700,000,000 in savings in all banking institutions for the first six months of this year, when compared with a decrease of \$82,710,075 in the last six months of 1929, indicates an unreasonable curtailment in purchasing.

While very much of the savings money in all banks goes into circulation through various channels, direct spending by the people would exercise a beneficial effect on their morale, as well as on national trade.

Creating Employment

AMONG many ways of creating and maintaining employment in various industries during slack times, one of the soundest is that of providing for plant expansion or renovation while general business is slow. This was recently illustrated in particular by a New England concern, facing curtailed production, giving full time employment for its employees by constructing a new warehouse. Workers from all the different departments of the factory were used in erecting the new building when work in individual departments was slack. According to the New England Industrial Council, results of the experiment are said to have been most satisfactory. Not only through this plan did this concern create and maintain employment for its personnel, but it also, through the purchase of building materials, aided in creating and maintaining employment in other lines.

"Re-Establish the Constitution"

SEPTEMBER 17, 1930, will mark the one hundred and forty-third anniversary of the signing of the Constitution of the United States. As a means of "helping to develop a better understanding of the meaning of the Constitution and a keener appreciation of its value and importance," the Constitution Educational Association calls upon all Americans to observe the period from September 14 to 20 as "Constitution Week." Suggestion is made that the slogan for the week be "Re-establish the Constitution," having in mind especially the need for "a re-dedication to the purposes set forth in the preamble, and for a restoration of the plan provided in the original Constitution for setting up and administering a Federal representative government."

Particularly are the press, educational institutions, chambers of commerce, the American Legion and other public-spirited bodies requested to be of service in promoting Constitution Week activities.

It is high time that we gave serious thought to the Constitution and what it means to the individual. With the varied and voluminous propaganda flooding the land in the interest of every sort of radicalism; with insidious doctrines being spread abroad, making light of and denouncing the fundamental principles on which this nation was founded and upon which it has flourished and reached heights of freedom and prosperity for its citizens never yet attained by other peoples, let us turn to the Constitution for guidance and stimulation of our faith, not for one week only, but for each day of the year. As set forth by the Constitution Educational Association:

"It is doubtful if any other nation in history ever experienced such a wholesome transformation of conditions in a period of a hundred years as occurred in this country in a period of five years when the Constitution was inaugurated.

"This tremendously enlightening fact should be made clear at Constitution Week meetings and should be one of the first and most impressive lessons taught to classes in history and civics in our schools. To understand this enlightening fact is to see clearly the value and importance of the Constitution and to realize that it is the outstanding factor in our unparalleled progress which has made us the leading nation.

"In view of the fact that such a seemingly miraculous transformation of conditions was brought about within a period of five years through the establishment of the Constitution, why not re-establish the Constitution as a means of improving conditions now?"

Nearly one-fourth of their net earnings was paid by the railroads in 1929 in taxes to the federal, state and local governments, says the Bureau of Railway Economics. Over-taxation of any industry, whether it be transportation, manufacturing or some other, costs a community, a state or the country at large many more dollars than it brings to their treasuries.

It is easy in the world to live after the world's opinion. It is easy in solitude to live after our own. But the great man is he who in the midst of the crowd keeps with perfect sweetness the independence of solitude.—Emerson.

Construction Contracts Let in South During July, Third Highest Month Recorded

\$641,000,000, the Total for First Seven Months of 1930, Is
Within \$138,000,000 of Valuation of Awards
for Entire 12 Months of 1929.

CONTRACTS awarded during July in the 16 Southern States covering construction, industrial and building projects, had a total valuation of \$103,549,500, according to a compilation of reports published in the DAILY CONSTRUCTION BULLETIN and in the construction columns of the MANUFACTURERS RECORD.

Aggregate value of Southern construction awards for the seven months ended August 1 is more than \$641,000,000. This total is within \$138,000,000 of the valuation of awards for the entire 12 months of 1929, and with five months more to go, construction work in the South will probably reach a new peak in value for one year.

An incomplete survey of the country as a whole shows a sharp decline in the valuation of awards last month as compared with the corresponding month of 1929 as well as a decrease in July awards compared with the total for June. For this reason, the big increase in the South in July awards as compared with the total for July, 1929, is most significant. In 1921 the South was the first section of the country to get on the highroad of prosperity following disastrous deflation in 1920. Considering industrial and business activities for the first seven months of this year, it appears probable that the South will again set the pace for the nation in business and construction recovery.

The July total is the third highest on record, being exceeded only by awards for June, 1930, which amounted to more than \$226,000,000, and awards totaling \$107,000,000 in the month of April, 1929. Last month's record is the more significant when the big total for the preceding month is considered. In June the award of contracts for three major pipe line projects, from gas and oil fields of the Southwest to distant industrial centers without such resources, involved a total expenditure of more than \$150,000,000. Last month, however, no particular class of construction accounted for the high total valuation figure. Rather,

practically every class of building and industry goes to make up the total. Moreover, the projects are widely scattered in the territory from Maryland to Texas.

Miscellaneous construction projects, covering undertakings not specifically covered in other classifications, account for more than \$35,000,000 of the July awards. Included are public garages, motor bus terminals, industrial plants of many kinds, piers, seawalls, grain elevators and the like. Road, paving and bridge work, which has formed a major part of the South's construction program since 1921, promises to surpass all previous records this year. The valuation of awards for such work last month exceeded \$31,400,000. Construction of sewer, water and drainage facilities in the section is being vigorously pushed, and contracts aggregating over \$9,180,000 were let in July. School building contracts last month amounted to \$7,825,500. Thus it is seen that public work comprises a major portion of the South's 1930 building program, yet it is stimulating building in other lines, with apartment houses, hotels, residences, bank and office structures and church buildings under way in every state.

In addition to the award of important contracts, preliminary announcements were made in July on definitely planned projects involving an approximate expenditure of \$118,500,000. With work already under way on important jobs let to contract in the first half of 1930, with construction yet to be started on numerous undertakings for which awards were made in July, and with a big volume of other work definitely planned and financing arranged for, there is distinct evidence that construction activity in the second half of this year will go forward in volume exceeding that in the corresponding period of 1929.

Varied Industrial Projects in All Parts of South

Industrial projects in wide variety are now being carried out and others are proposed. The American Rolling Mill Company which early in the year

began improvements to cost \$1,000,000 at Ashland, Ky., last month made public plans for expending an additional \$1,000,000 there. Over \$5,000,000 will be expended for reconstructing docks and providing adequate terminal facilities at Baltimore for the Baltimore Mail Steamship Co., which will open a direct service between the port and Hamburg. The DeBardeleben Coal Corporation, Birmingham, is going forward with a big development program to increase the production of coal in Alabama mines and is expending more than \$1,000,000 for rebuilding a ship especially fitted to handle coal from Pensacola, Fla., to Gulf ports. The Crossett Chemical Co., Crossett, Ark., has been organized to erect a large plant to manufacture products from the destructive distillation of hardwoods. The Oklahoma Carbon Industries, Inc., and the Westoak Gasoline Co., will build a carbon black plant and a casinghead gasoline plant at Sayre, Okla., to cost \$650,000. A \$5,000,000 terminal warehouse is to be erected in St. Louis by the Illinois Terminal Railroad System. Over \$8,000,000 is to be expended at Brownsville, Texas, in providing a deep water port.

Pipelines to Transport Petroleum Products to Great Industrial Centers in North, West and East

Although hundreds of millions of dollars have been expended in recent months in laying new pipe lines to transport gasoline, crude oil and natural gas from the South and Southwest, activity continues without a check. In addition to the building of numerous new lines, projects completed last year are being extended to serve other areas, and loop lines and additional compressing facilities are being provided to boost carrying capacities. The Great Lakes Pipe Line Co. is going forward with a 1500-mile gasoline pipe line system, costing \$12,000,000, to handle 30,000 barrels daily. Huge sums are being expended in expanding the capacity of the pipe line system of the Cities Service Gas Co. The Texas-Empire Co. is building eight new pumping stations

along its oil line to Chicago. The Southwestern Natural Gas Co. is building a 100-mile high pressure pipe line from the Quinton fields of Oklahoma to various towns and cities. The Gypsy Oil & Gulf Pipe Line Co., Tulsa, contemplates building an 1100-mile pipe line system from Tulsa to Pittsburgh, Pa. The Memphis Natural Gas Co. will build a 50-mile extension to serve Mississippi communities. A \$12,000,000 project to provide Fort Worth, Texas, with natural gas, is contemplated.

Numerous Important Power Developments Under Way and Proposed

Meanwhile expansion of steam-electric and hydro-electric power producing facilities in the South is under way in volume. The Virginia Electric & Power Co., Richmond, is building a big mileage of lines to serve rural areas and scores of separate communities. The Oklahoma Gas & Electric Co. is going forward with an extension to its Belle Isle steam plant. The West Virginia Power & Transmission Co. expects to start work soon on eight power projects on the Cheat and Blackwater rivers. The White River Power Corp., Pine Bluff, has begun preliminary work on a \$13,000,000 dam, part of a \$43,370,000 development program. The Tennessee Electric Power Co. has expended more than double the amount this year for improvements than it spent in the corresponding period of 1929. The Mountain Power Co., Chattanooga, proposes a 55,000 horsepower project. The Potomac Electric Co. is adding new units to its Bennings steam-electric generating station.

Present Forward Movement Covers Diversity of New Enterprises Over Big Area

Even a cursory examination of the items published from week to week serves to reveal the scope of the present forward movement in industrial and business expansion in the South. Among important projects reported last month several outstanding undertakings are here summarized. At Melbourne, Fla., the Mandalay Club proposes a \$1,500,000 resort, including hotel, yacht club, swimming pool, docks, yacht basins and other facilities. The American Cyanamid Company, New York, is pushing work on a \$4,000,000 super-phosphate plant at Tampa. The Atchison, Topeka & Santa Fe Railway System is building 355 miles of new lines at a cost of \$15,000,000. The Chesapeake & Ohio Railway Co. awarded contracts in July for a \$1,100,000 tunnel near Alleghany, Va. The Pennsylvania Railroad let contracts for razing 275 dwellings in Baltimore, prior

RECORD OF SOUTHERN ACTIVITY IN BUILDING AND INDUSTRY JULY, 1930.

	Contracts Awarded	Contracts to be Awarded
Apartment houses and hotels.....	\$3,705,000	\$6,520,000
Association and fraternal.....	210,000	283,000
Bank and office buildings.....	4,691,000	4,843,000
Church buildings.....	2,132,000	1,287,000
City, county, Government and state buildings.....	4,887,500	5,791,500
Dwellings.....	3,099,500	1,375,000
Miscellaneous construction.....	35,208,500	56,908,500
Road, paving and bridges.....	31,439,000	29,437,000
School buildings.....	7,825,500	2,976,500
Sewers, drainage, water works.....	9,186,500	8,426,000
Store buildings.....	1,165,000	678,500
	\$103,549,500	\$118,548,000

to beginning work on a new tunnel, one of the main features of a \$20,000,000 electrification program. A recent survey of building and construction projects in the Lower Rio Grande Valley of Texas indicates work under way and proposed to entail an expenditure of over \$46,000,000. The Santa Fe System awarded contract for a \$1,000,000 bridge, 19 miles north of Amarillo. Work is proceeding on dredging the intercoastal waterway from near Jacksonville to Miami, Fla. Additional contracts are being let on new facilities in connection with the building of the \$20,000,000 air field and flying school for the Army at Schertz, Texas. Huge sums are being expended in Texas for irrigation projects to provide for agricultural development on hundreds of thousands of acres, for furnishing fast growing communities with water for domestic and industrial purposes and for developing hydro-electric power.

Buildings for All Types of Service Comprise 1930 Program

In the aggregate a huge sum is being expended in the South for building projects costing from \$500,000 to \$10,000,000 each. While the Government has a big program mapped out for the section, only a few contracts have been awarded to date, the majority of the new buildings not having advanced beyond the plan stage, while sites still are to be acquired for scores of government buildings. Yet, despite delay in getting public construction under way, other work has been started and financing definitely arranged for on new building enterprises for all types of service in the states from Maryland to Texas. Herewith are briefly summarized a few representative building projects to indicate something of the magnitude of such operations:

Work is under way on an \$8,000,000 freight station and office building for the Texas & Pacific Railway Co., at Fort Worth. A 20-story annex is being erected for the Republic National Bank and Trust Co., Dallas, at a cost of \$1,500,000. Contracts have been let for the \$600,000 Hotel Frances, Monroe, La. The Fidelity National Bank and Trust Co., Kansas City, Mo., is erecting a 32-story, \$3,000,000 bank and office build-

ing. A \$600,000 hotel for Lucian Black is under way in Oklahoma City. General contract has been awarded for a \$2,500,000 Union Station in Oklahoma City. Over \$800,000 is to be expended for new buildings at the University of Virginia. Contracts will be let shortly for a \$600,000 senior high school building in St. Joseph, Mo. A \$750,000 unit is being erected at Gadsden, Ala., for the Holy Name of Jesus Hospital. Ten additional stories are being added to the Dierks Building, Kansas City, Mo., at a cost of \$750,000. A 16-story Allied Arts Building is projected at Lynchburg, Va., to cost about \$1,000,000. A \$600,000 headquarters building for the American Red Cross is proposed at Washington. The Gammill Company, Jackson, Miss., is erecting a \$750,000 hotel. The State of Maryland has selected a site for a \$1,000,000 penitentiary near Hagerstown.

Among important Government building projects under way and proposed in the South are the following:

Marine Hospital, New Orleans, \$1,178,000; Army and Navy Hospital, Hot Springs, Ark., \$1,500,000; Department of Interior dormitory group, Washington, \$830,000; Department of Agriculture building, Washington, \$3,000,000; Supreme Court building, Washington, \$8,240,000; National Home for Disabled Volunteer Soldiers, Johnson City, Tenn., \$650,000; Naval Training Station, Norfolk, Va., \$600,000; Veterans Hospital, Waco, Texas, \$1,200,000; Federal Building, Baton Rouge, La., \$500,000; Officers Quarters, Fort Bragg, N. C., \$640,000; Federal Building, Tulsa, Okla., \$1,000,000; Federal Building, Cumberland, Md., \$640,000; Officers Quarters, Fort Benning, Ga., \$580,000; Federal Building, Norfolk, Va., \$2,000,000.

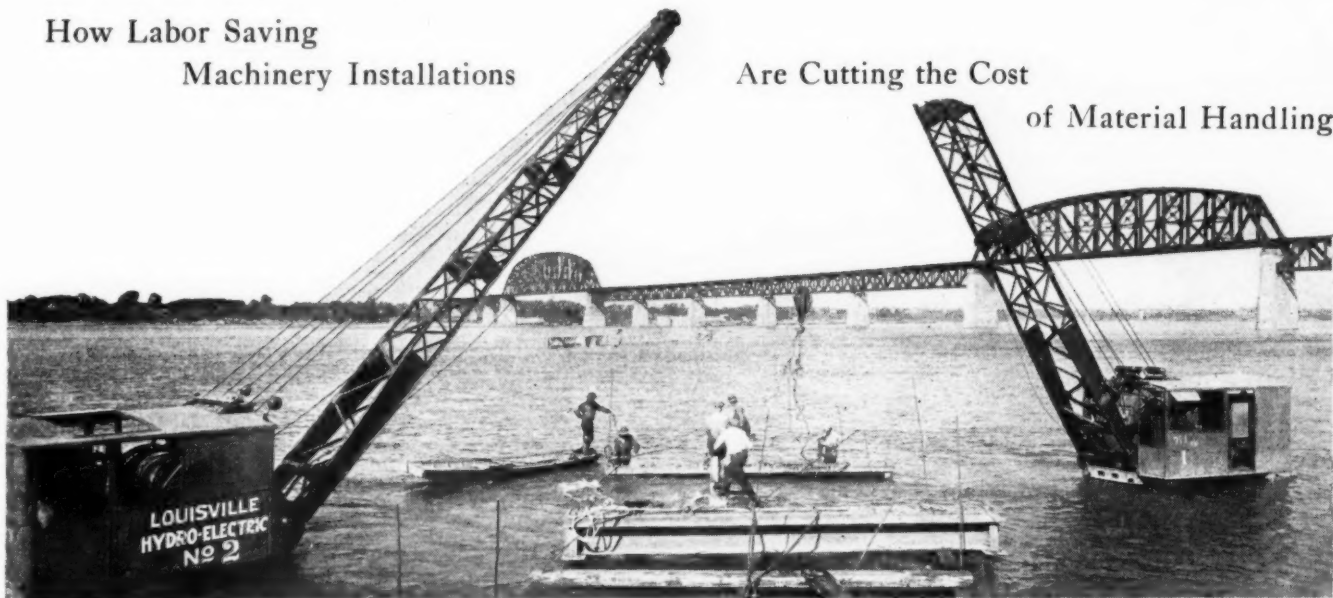
Bids on \$800,000 Y. M. C. A.

Dallas, Tex.—Bids will be opened September 2 by the Young Men's Christian Association, E. R. Brown, president, to erect an \$800,000 building on Ervay street, near Patterson avenue, this city. The structure will be 14 stories. There will also be an outdoor gymnasium, 52 by 130 feet. Anton F. Korn, Dallas, is the architect.

Lifting the South's Industrial Load

How Labor Saving
Machinery Installations

Are Cutting the Cost
of Material Handling

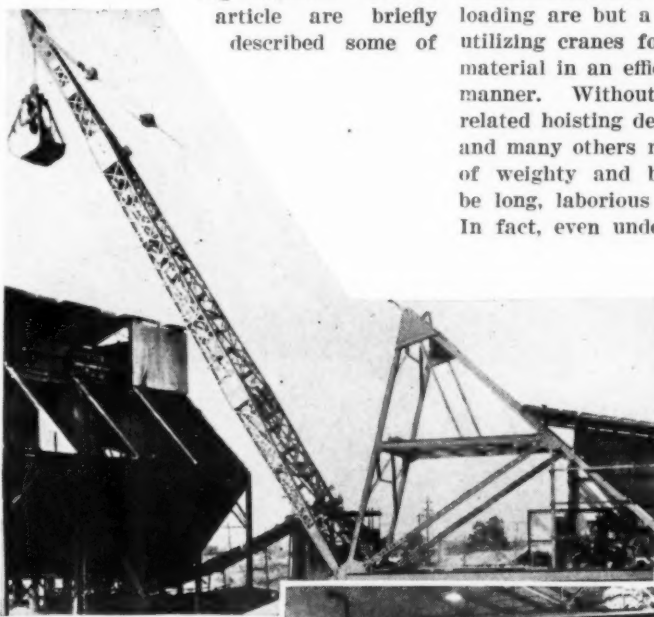


Link-Belt Crawler Cranes Working on a Crib-Type Cofferdam in the Ohio River

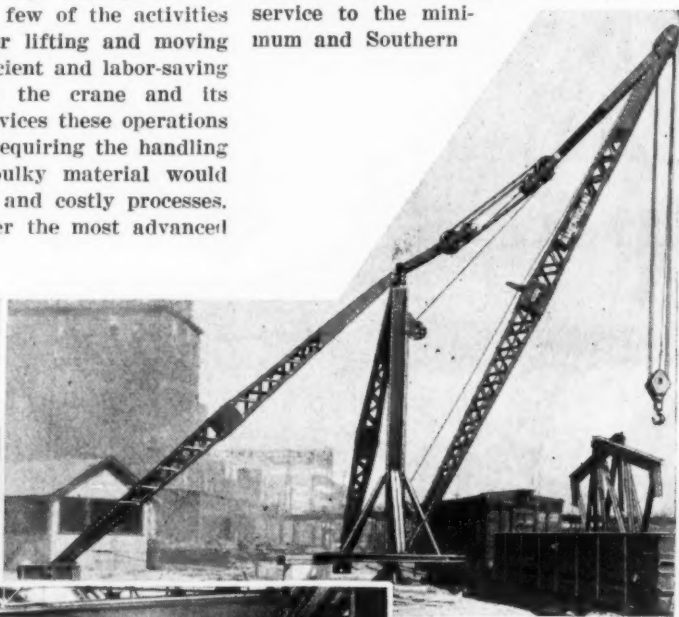
MANY and varied are the uses of hoisting equipment in Southern industry. In the factories of the South, in its warehouses and terminals and on construction projects will be found employed the latest types of machinery for lifting and for moving material. In this article are briefly described some of

the Southern operations using one type of labor-saving material-handling equipment—that of the crane, in its simplest form to the more complex mechanism. Bridge building, steel erection, stone placing, lumbering, levee work, excavating, manufacturing, mining, railroad construction, and cargo loading and unloading are but a few of the activities utilizing cranes for lifting and moving material in an efficient and labor-saving manner. Without the crane and its related hoisting devices these operations and many others requiring the handling of weighty and bulky material would be long, laborious and costly processes. In fact, even under the most advanced

system of material handling a large toll is exacted of industry and of the ultimate consumer by the necessity of picking up, putting down and rehandling both the raw materials and the finished product. Modern power-hoisting equipment, however, has cut the labor cost of this service to the minimum and Southern



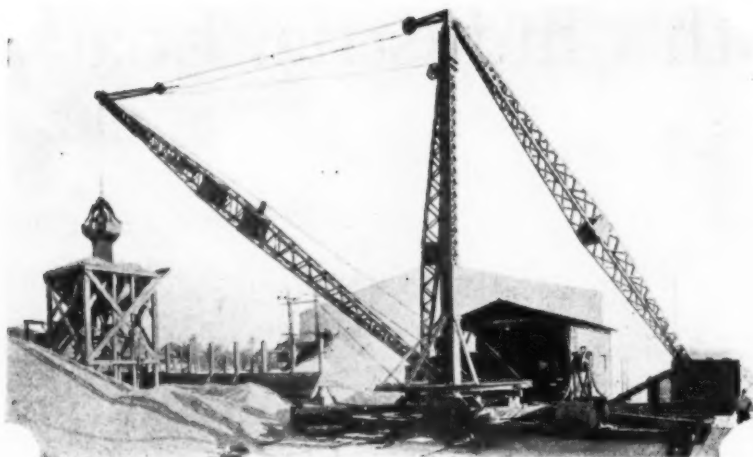
Full Circle Crane, With Clam Shell Bucket, Operated on 90-foot Boom by a 3-Drum Lambert Electric Hoist at Columbia, S. C.



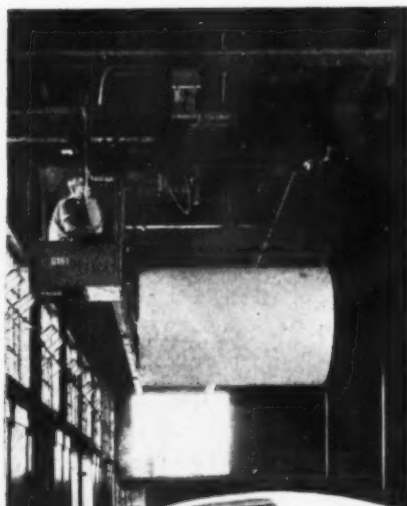
American Stiffleg Derrick, with 50-foot Boom, Unloading Structural Steel at Fort Worth for Texas and Pacific Railroad.



A Box Four-ton, Cage Controlled, Electric Traveling Crane of 48-foot Span, in Machine Room at Tuscaloosa Plant of Gulf States Paper Company



American Steel Traveling Derrick Dumping Sand at Plant of Tampa Coal Co.



Three-ton Capacity Conco Crane Lifting Heavy Roll of Paper at Bogalusa Plant of New Orleans Corrugated Box Co.



Motor-Truck Mounted Universal Cranes Erecting Steel for Atlanta Union Depot

A Whiting 3-motor Electric Traveling Crane Lifts Up to 4 Tons of Paper in This Warehouse of the Mengel Co., at Louisville.



Browning Cranes Engaged in Flood Control Work on the Mississippi River, Handling Precast Concrete Mats Which Are Laid to Prevent Levee Erosion.



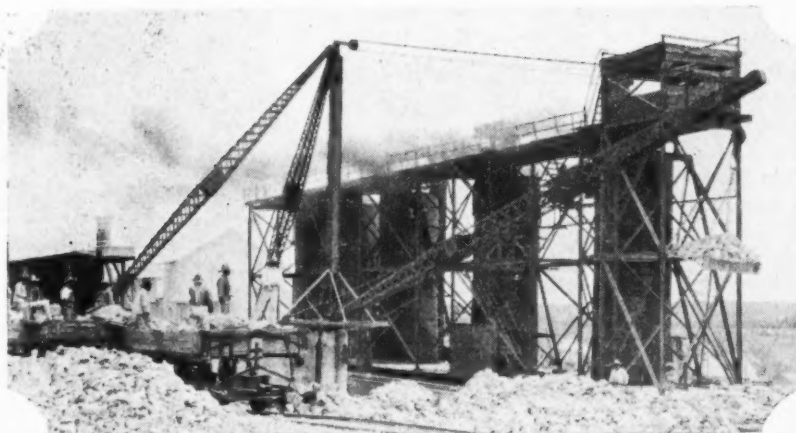
Traveling Crane With 4-line Blaw-Knox Bucket Handling Cinders at Spencer, N. C., for Southern Railway.

industries are securing increased efficiency and at the same time lowering the cost of operation through crane installation. Some illustrations are here cited.

An example of the application of the power-lifting device for cargo purposes, eliminating the great amount of manual labor otherwise necessary, is found in the installation at the \$8,000,000 terminal recently completed by the City of Baltimore and leased to the Western Maryland Railroad. The terminal is served by Wellman electrically operated, semi-portable gantry cranes. In addition to general use in handling freight to and from lighters and other vessels these cranes are adapted to handling loads too heavy for ships' tackle and for unloading ore and other bulk mate-

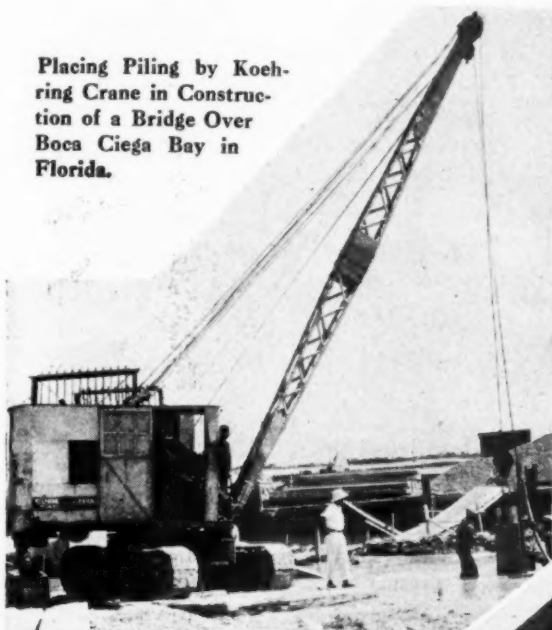
rail by clam shell buckets. Another application of hoisting equipment is that of the American stiffleg derrick for freight handling at Fort Worth, by the Texas and Pacific Railroad. This has proved especially effective in unloading heavy structural steel. For handling locomotive cinders at Spencer, N. C., the Southern Railway uses a traveling crane equipped with a one and a half yard, 4-line Blaw-Knox bucket.

At the municipal sewage disposal plant, Baltimore, a Browning crane with clam shell bucket attachment is being utilized for the unusual purpose of loading the dried sewage solids into the trucks of farmers who find use for it as fertilizer. Several cranes of this same type are now in the service of the Mississippi River Commission doing flood control duty, especially in the handling of precast concrete mats which are replacing to a great extent the willow mats formerly used to prevent ero-

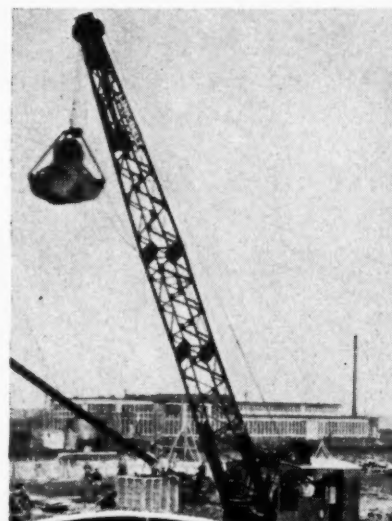


Clyde Stiffleg Derrick, Operated by 60-Horsepower, 3-Drum Electric Hoist, for Dittlinger Lime Co., New Braunfels, Texas.

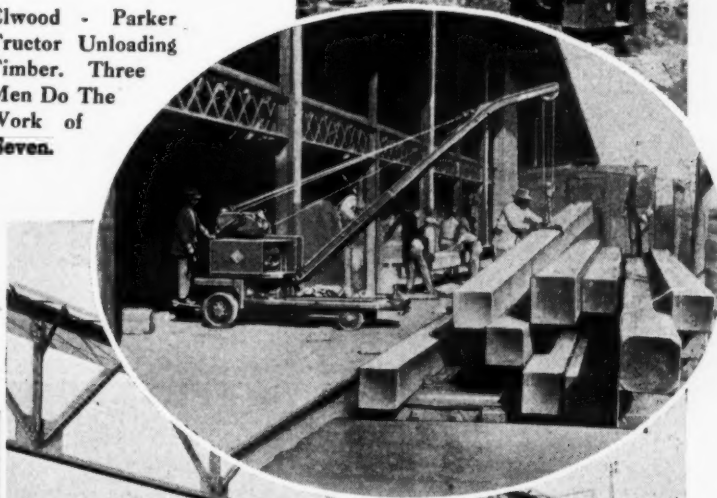
Placing Piling by Koehring Crane in Construction of a Bridge Over Boca Ciega Bay in Florida.



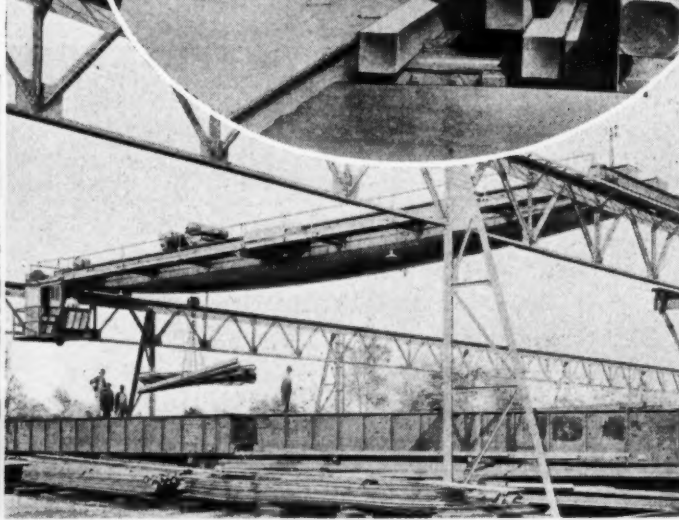
Link Belt Crawler Crane Equipped With Grab Bucket, Handling Material During Construction of a Virginia Chemical Plant.



Elwood - Parker Tractor Unloading Timber. Three Men Do The Work of Seven.



Three Wellman Cranes Serve Port Covington Terminal of the Western Maryland Railway at Baltimore.



Shepard Crane Unloads and Stores Raw Material at Birmingham Plant of Virginia Bridge & Iron Company.

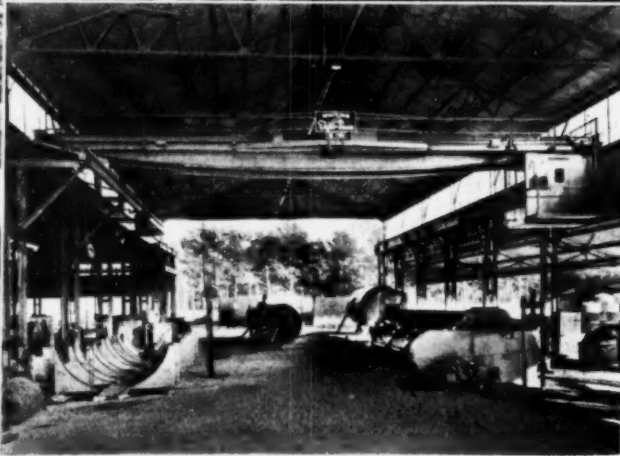
sion of the bases of the levees. The particular work of the cranes is to lift the concrete slabs to the "sinking" barge, where slabs are tied together

At Right—Two 92-Foot Span Alliance Cranes in New Plate Mill of Gulf States Steel Company, at Alabama City, Near Gadsden, Alabama.

Below—Lorain-60 Diesel Combination Shovel and Drag Line, Stripping Overburden and Loading Rock for Florida Lime Products Co., Florala, Ala.

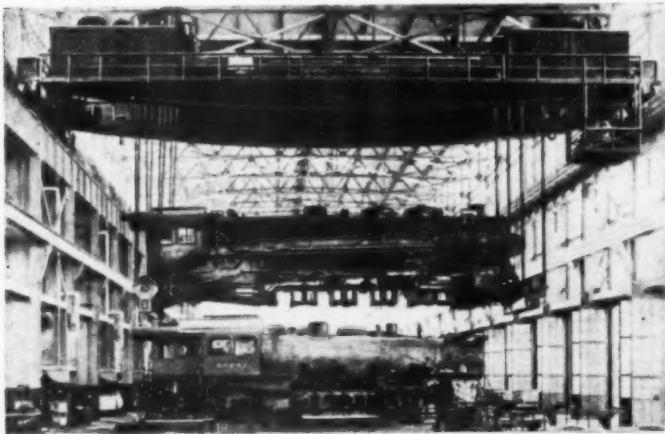


Euclid Cranes Handle Cans on Freezing Floor of Florida Power & Light Co. Ice Plant at West Palm Beach.



Tiger Crane, with 56-Foot Span and 25-Foot Lift, Operating in Houston Shops of Wyatt Metal and Boiler Works.

with cables, then lowered to the levee bases. In other construction operations the crane is used to great advantage, not only for lifting but also for excavating. Much equipment of this kind, including several American cranes, was employed by contractors who built the



Type "HH" Crane Installed in Cleburne, Texas, Shops of the Atchison, Topeka and Santa Fe Railway. One of the Largest P&H Overhead Cranes Ever Built, With a Capacity of 500,000 Pounds.



Type "ANR" Crane of the Harnischfeger Corporation Installed at Plant of Ingalls Iron Works, Birmingham. At Houston the Shell Petroleum Corporation Has Installed this Same Type of Crane. Span 50 Feet.

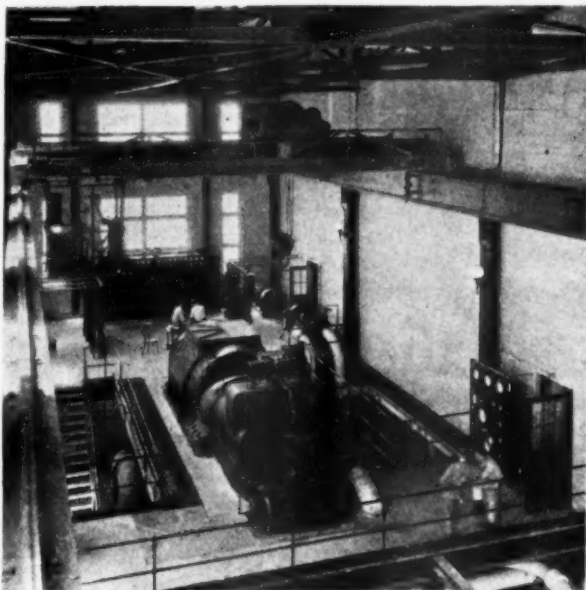
immense Conowingo hydro-electric project on the Susquehanna River in Maryland. One of the American cranes thus employed was later purchased from the contractor by the Gulf States Paper Corporation to handle pulpwood at its Tuscaloosa plant. This plant is equipped with eight Box electrically-operated cranes, as well as a number of electric hoists. In erecting the steel for Atlanta's union depot the Buchanan Construction Co., of that city, operated three Universal cranes.

Contractors for a bridge over Boca Ciega Bay, in Florida, used a Koehring crane with block and hook attachment for handling the piling and other materials. Five Link-Belt crawler cranes were utilized in construction of the new

hydro-electric plant of the Louisville Hydro-Electric Co., at Louisville, Ky. These machines were used as shovels for grading and loading rock; fitted with clam shell buckets for handling the soft mud, and equipped with hook and block for handling wooden forms, placing bridge steel and setting timbers for the crib cofferdam. A number of cranes of the same type were used for various purposes in construction of a large chemical plant in Virginia. The McKenzie Construction Co., San Antonio, had a Clyde stiffleg derrick mounted on two flat cars at work during construction of the Olmos dam, built to protect San Antonio from floods.

Moving lumber is the duty of the Elwell-Parker crane tractor owned by the Standard Export Lumber Co., New Orleans. Timbers handled range in size from 6 by 6 inches to 14 by 16 inches and in length from 20 to 40 feet, and the operation is performed by a gang of six laborers and one truck operator. In the yard of the Texas Ash Co., at Houston, a Clyde timber derrick handles logs and timbers. For lifting the cans both before and after freezing the ice at its West Palm Beach plant, the Florida Power & Light Co. has installed Euclid cranes. The Tulsa Ice Co., Tulsa, Okla., using a Shepard single I-beam crane over its freezing floor, is another

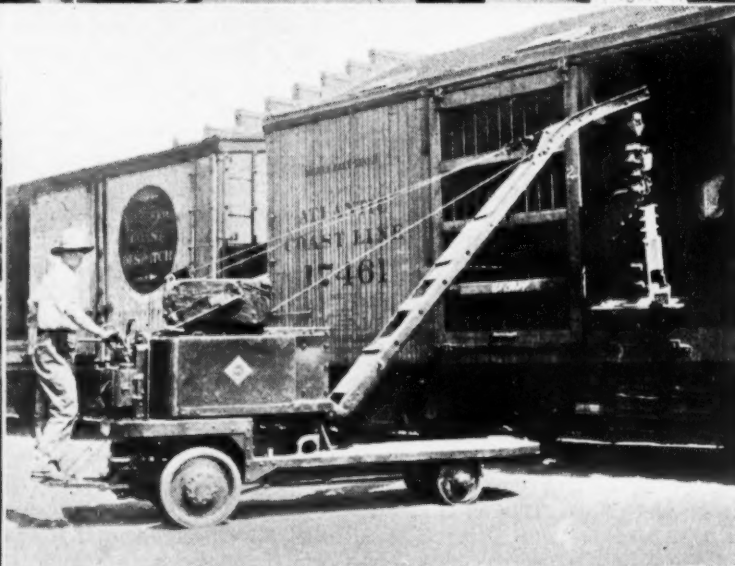
A Box 20-Ton Electric Crane with 35-Foot Span, in Power Plant of Gulf States Paper Corp., Tuscaloosa, Ala.



These Two 15-Ton Whiting Cranes Have a 77-Foot Span. They Operate in the Locomotive Shops of the Illinois Central Railroad at Paducah, Ky.



Shepard Crane With Grab Bucket, Operating in Acid Phosphate Plant at Jacksonville, Fla.



Loading 1100-Pound Punch Press Into Railroad Car With Elwell-Parker Tractor.

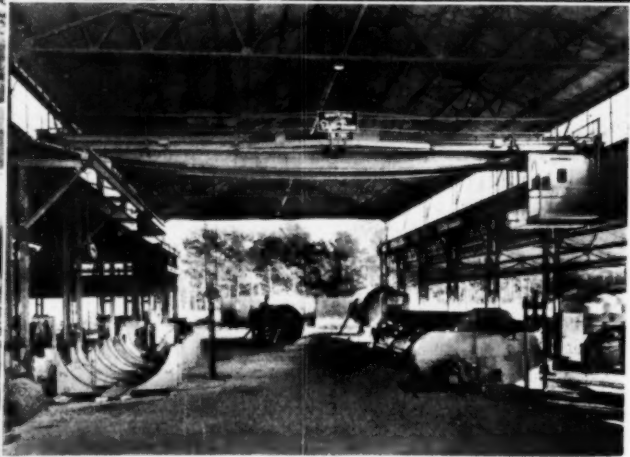
sion of the bases of the levees. The particular work of the cranes is to lift the concrete slabs to the "sinking" barge, where slabs are tied together

At Right—Two 92-Foot Span Alliance Cranes in New Plate Mill of Gulf States Steel Company, at Alabama City, Near Gadsden, Alabama.

Below—Lorain-60 Diesel Combination Shovel and Drag Line, Stripping Overburden and Loading Rock for Florida Lime Products Co., Florala, Ala.



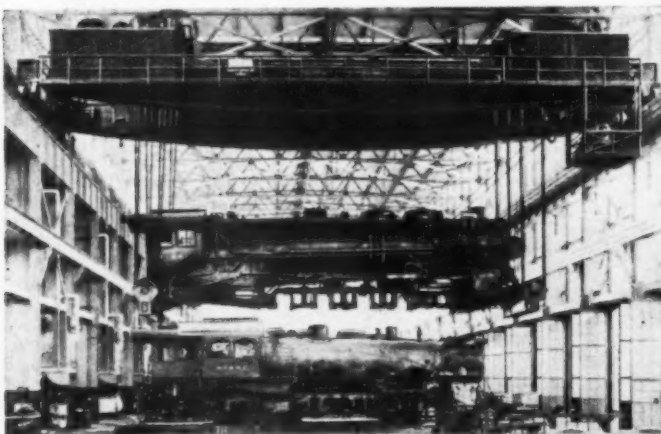
Euclid Cranes Handle Cans on Freezing Floor of Florida Power & Light Co. Ice Plant at West Palm Beach.



Tiger Crane, with 56-Foot Span and 25-Foot Lift, Operating in Houston Shops of Wyatt Metal and Boiler Works.

with cables, then lowered to the levee bases. The crane is used to great advantage, not only for lifting but also for excavating. Much equipment of this kind,

In other construction operations, including several American cranes, was employed by contractors who built the



Type "HH" Crane Installed in Cleburne, Texas, Shops of the Atchison, Topeka and Santa Fe Railway. One of the Largest P&H Overhead Cranes Ever Built, With a Capacity of 500,000 Pounds.



Type "ANR" Crane of the Harnischfeger Corporation Installed at Plant of Ingalls Iron Works, Birmingham. At Houston the Shell Petroleum Corporation Has Installed this Same Type of Crane. Span 50 Feet.

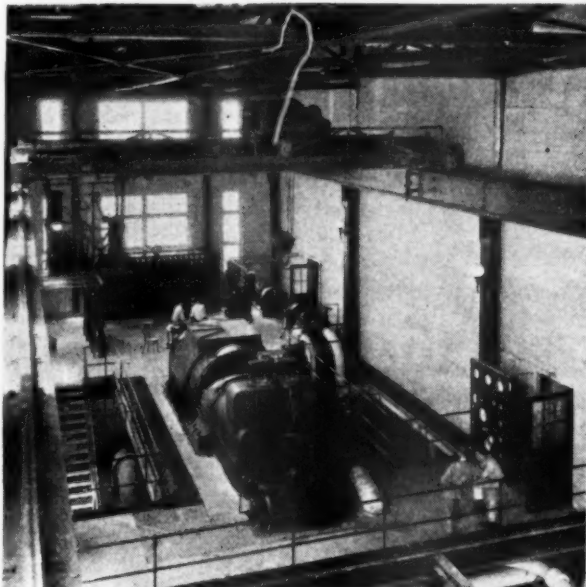
immense Conowingo hydro-electric project on the Susquehanna River in Maryland. One of the American cranes thus employed was later purchased from the contractor by the Gulf States Paper Corporation to handle pulpwood at its Tuscaloosa plant. This plant is equipped with eight Box electrically-operated cranes, as well as a number of electric hoists. In erecting the steel for Atlanta's union depot the Buchanan Construction Co., of that city, operated three Universal cranes.

Contractors for a bridge over Boca Ciega Bay, in Florida, used a Koehring crane with block and hook attachment for handling the piling and other materials. Five Link-Belt crawler cranes were utilized in construction of the new

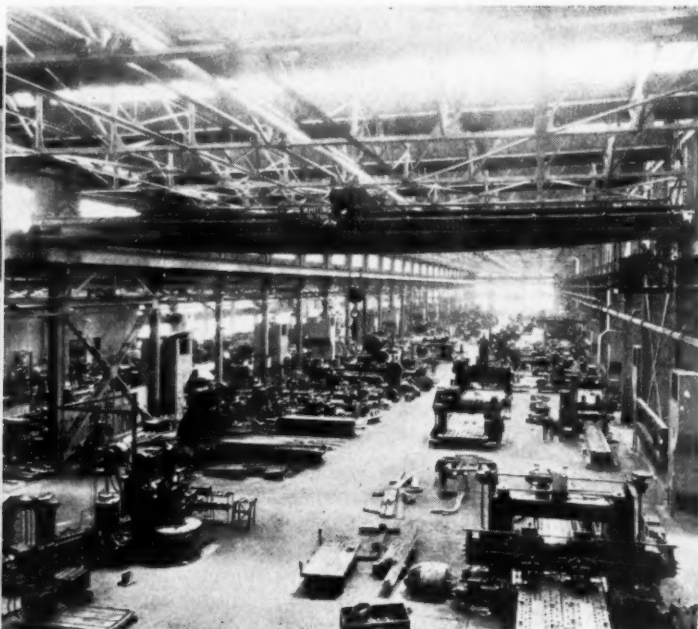
hydro-electric plant of the Louisville Hydro-Electric Co., at Louisville, Ky. These machines were used as shovels for grading and loading rock; fitted with clam shell buckets for handling the soft mud, and equipped with hook and block for handling wooden forms, placing bridge steel and setting timbers for the crib cofferdam. A number of cranes of the same type were used for various purposes in construction of a large chemical plant in Virginia. The McKenzie Construction Co., San Antonio, had a Clyde stiffleg derrick mounted on two flat cars at work during construction of the Olmos dam, built to protect San Antonio from floods.

Moving lumber is the duty of the Elwell-Parker crane tractor owned by the Standard Export Lumber Co., New Orleans. Timbers handled range in size from 6 by 6 inches to 14 by 16 inches and in length from 20 to 40 feet, and the operation is performed by a gang of six laborers and one truck operator. In the yard of the Texas Ash Co., at Houston, a Clyde timber derrick handles logs and timbers. For lifting the cans both before and after freezing the ice at its West Palm Beach plant, the Florida Power & Light Co. has installed Euclid cranes. The Tulsa Ice Co., Tulsa, Okla., using a Shepard single I-beam crane over its freezing floor, is another

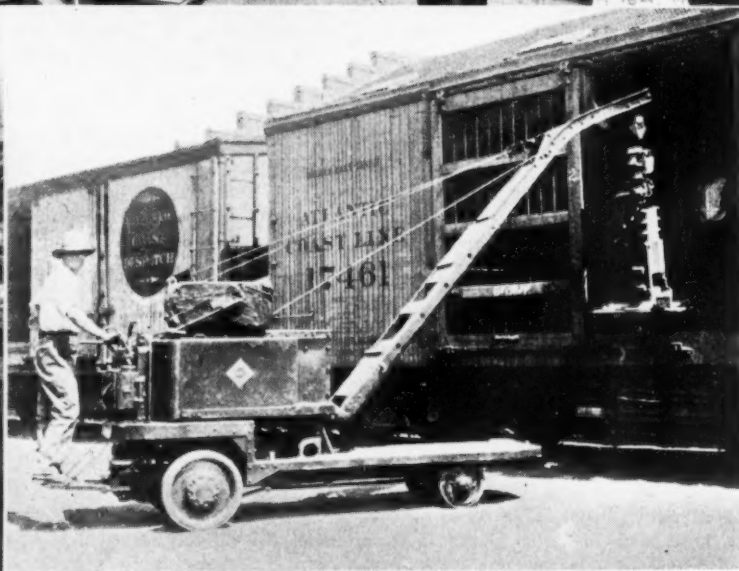
A Box 20-Ton Electric Crane with 35-Foot Span, in Power Plant of Gulf States Paper Corp., Tuscaloosa, Ala.



These Two 15-Ton Whiting Cranes Have a 77-Foot Span. They Operate in the Locomotive Shops of the Illinois Central Railroad at Paducah, Ky.



Shepard Crane With Grab Bucket, Operating in Acid Phosphate Plant at Jacksonville, Fla.



Loading 1100-Pound Punch Press Into Railroad Car With Elwell-Parker Tractor.

ice manufacturer utilizing a power-lifting device. Another application of the crane to indoor use is an installation of two Shepard cranes in the Houston shops of the Emsco Derrick & Equipment Co. The Texas Electric Casting Co., of Houston, lifts heavy castings by means of a Tiger crane, and the Wyatt Metal & Boiler Works, Houston, uses the same type of crane to handle heavy products. At Shreveport, La., the Caddo Tool & Forging Co. has installed a Curtiss pneumatic low headroom crane. Another Louisiana concern, the New Orleans Corrugated Box Co., Bogalusa, uses a 3-ton Conco crane to handle heavy rolls of paper.

Cranes are extensively used in mining and material handling operations. At Florala, Ala., a Lorain-60 is engaged in stripping and rock handling operations for the Florala Lime Products Co. The Wolf River Sand Co., Memphis, Tenn.,

uses an American steel stiffleg derrick equipped with a Williams clam shell bucket for reclaiming sand from the sumps into which it is dredged. At its plant on the Hillsborough River at Tampa, Fla., the Tampa Coal Co. operates two such derricks mounted on wooden traveling platforms on wheels, for handling sand and gravel. A Lambert electric hoist installed at the plant of the Weston & Brooker Co., Columbia, S. C., allows storage and reclamation of materials over an area capable of storing 31,500 cubic yards. Daily capacity of this crane, which is equipped with a clam shell bucket and 90-foot boom, is 1500 cubic yards. An acid phosphate plant at Jacksonville, Fla., uses a Shepard bridge type crane equipped with grab bucket to handle bulk materials. On the docks of the Armour Fertilizer Co. at Wilmington, N. C., a travelling wharf crane equipped with a clam shell

bucket is capable of handling 50 tons per hour.

The Dittlinger Lime Co., New Braunfels, Texas, uses a Clyde stiffleg hoist in its operations. Whiting electric traveling cranes for handling huge rolls of paper form part of the equipment of the storage warehouse of the Mengel Co., Louisville, Ky. In both the locomotive erecting shop and the locomotive machine shop at Paducah, Ky., the Illinois Central Railroad has installed two 15-ton Whiting cranes. Shepard cranes are being used by the Virginia Bridge & Iron Co. at its Memphis, Tenn., and Birmingham, Ala., plants. In addition to cranes serving the shops of the latter plant, there is a crane of the bridge type which serves in the storage yard for loading and unloading the immense pieces of steel and iron into railroad cars.

The Unjustified Apple Embargo

By

GEORGE E. PETLEY,
Exporting Marketing Specialist,
Winchester, Va.

FEW people not directly or indirectly engaged in the apple industry realize the magnitude of this staple industry and its broad ramifications—the hundreds of millions invested in orchards, packing plants, by-products plants, dependent cold storage plants, cooperage and supply factories, chemical factories, and in allied enterprises. While the growing and marketing of an average yearly crop of 96,000,000 bushels, roughly valued at \$200,000,000, has not been without its headaches and while the apple industry has had its bad years mixed in goodly proportion with its good years, those engaged in it have proved themselves capable of progress; and self-imposed restrictions and regulations have helped the industry to move steadily forward.

As far back as records are obtainable, apples have been over-produced. There always have been more apples during average years than the American public has been able to consume at prices allowing the producer a profit. This situation has led to development of foreign markets until, in 1929, American apples were exported to every country in Europe except Spain and Italy—these countries arbitrarily barring their importation—to every country of South and Central America, to the West Indies and many of the Pacific Islands as well as to Japan and China. This wide development has been brought about in some cases despite the fact that our apples come in direct competition with apples grown in the importing country, and success undoubtedly has been a result of putting up a superior product packed

in a more attractive manner than the fruit with which it must compete.

In short, the whole problem of marketing the surplus apple production of this country has been worked out within the industry and apple men of the country have demonstrated their ability to find new outlets and to expand and develop these outlets at a rate commensurate with the need. They have required no outside assistance and feel justly proud of their accomplishments, and confident of their continued progress.

However, the smooth running and well-oiled marketing machinery has begun to emit creaks, groans, squeaks and other noises common to machinery when a load of sand is suddenly dumped among the gears. Without warning to the trade, the British Ministry of Agriculture on June 21, 1930, issued an order prohibiting importation of certain grades of American apples between the period of July 7 and November 15 of each year. The reason given is, "For the Prevention of the Introduction of the Apple Fruit Fly." It should be mentioned that the apple fruit fly or railroad worm is more common to Canada and Nova Scotia than it is to the United States where it is found only in the New England states. It is practically unknown in the Northwest and in the important exporting states of Virginia, West Virginia, Pennsylvania and Mary-

land. It should also be pointed out that the partial embargo *does not apply* to Canada and Nova Scotia. It should be further mentioned that all efforts to convince the British Government that the apple fly is not found in two of our most important producing and exporting sections have been completely unavailing.

The problem is not what will be done by the trade in the marketing of the prohibited grades, but what will be the next step, and are we eventually to be either completely barred from a market which absorbs 75 per cent of our exportable surplus or will the grades allowed admittance be handicapped by imposition of an import duty? In view of changing public opinion in Great Britain toward a system of empire preference and tariff walls, this is a genuine possibility. So much for Britain.

Recently our second most important market abroad, the Argentine, has been completely closed to our barrel apples—which means closed to Virginia, West Virginia, Pennsylvania, Maryland and New York. Last year alone, Virginia and West Virginia sent 200,000 barrels to the Argentine. The reason for this embargo? As this is written, the trade does not know the answer. Doubtless when it is known it will be an apparently justified move, some reason will be given about insects, diseases or what-not. In any event, the Argentine public will be satisfied that the reason is a real one and that, although they may like our fruits and may prefer them above others, diseases and pests must be excluded.

Railroad Consolidation

Duty and Power of the Interstate Commerce Commission

By

R. V. TAYLOR,
Point Clear, Ala.

EVERYONE familiar with the Constitution of the United States knows that it has conferred upon Congress the power "to regulate commerce with foreign nations and among the several States, and with the Indian Tribes," subject only to the limitation that "no preference shall be given by any regulation of commerce or revenue to the ports of one State over those of another."

Certain of the vast powers and duties which in these brief words have been placed in the hands of Congress by the fundamental law have, in turn, been delegated by Congress to the Interstate Commerce Commission, under Section 5 of the Interstate Commerce Act, as amended August 24, 1912; February 28, 1920, and June 10, 1921.

The first of these, in the order of their priority, has given to the Commission the power to approve of pooling passengers and freights.

The second of these powers gives to the Commission authority to approve of voluntary acquisition of control of one carrier by another when not involving consolidation, when such action "will be in the public interest."

The third and most important of these delegations to the Commission covered both a power and a duty and was embodied in these words (italics mine):

"The Commission shall as soon as practicable prepare and adopt a plan for the consolidation of the railway properties of the Continental United States into a limited number of systems. In the *division* of such railways into such systems under such plan, *competition shall be preserved as fully as possible and wherever practicable the existing routes and channels of trade and commerce shall be maintained.* Subject to the foregoing requirements, the several systems *shall be so arranged* that the cost of transportation as between competitive systems, and as related to the values of the properties through which the service is rendered shall be the same, as far as practicable, so that these systems can employ uniform rates in the movement of competitive traffic and under efficient management earn substantially the same rate of return upon the value of their respective railway properties."

These extracts from the law clearly show that Congress by this Act *empowered* the Commission to approve of pooling, and *empowered* the Commission to

Indications are that there will be very active discussion of the rail consolidation question when Congress convenes in December. The writer of this article, R. V. Taylor, while making no suggestions nor offering any plan of procedure, explains the duty of the Interstate Commerce Commission under the law as now enacted. For three years Mr. Taylor served as a member of the Commission, taking the place made vacant by resignation of Commissioner McChord. Previous to appointment on the Commission he was vice-president and general manager of the Mobile & Ohio Railroad Company, having been in railroad service 40 years. After the termination of government control in 1918, among his other activities he served two terms as Mayor of Mobile, Ala.—Editor Manufacturers Record

approve of the acquisition of control of one carrier by another under certain conditions, and *ordered* the Commission to "prepare and adopt a plan for the consolidation of the railway properties of the Continental United States into a limited number of systems."

The Commission has in several of its annual reports suggested to Congress that it be relieved of the duty of adopting this plan, but this request has not been complied with and this mandate is today the law of the land.

No serious question ever has arisen as to the power Congress conferred upon the Commission, either with respect to pooling, or to the voluntary control under terms prescribed, of one carrier by another. There are, however, at least three schools of thought, both as to the purpose of Congress and the power it conferred upon the Commission, to require obedience to its mandate to prepare and adopt a plan for the consolidation of the railway properties of the Continental United States into a limited number of systems. The contention of the first of these schools is that Congress was indulging in idle words without effectiveness, except to the extent that a vehicle was being constructed upon which voluntary consolidations of

railroads made for corporate interests and purposes, might ride past laws which would otherwise prohibit them. The second school, while assuming that Congress had in mind the grouping of the railways so that an adequate system of transportation might be provided, from which improved service would result for all of the people, is of the opinion that it failed to furnish the Commission with the power necessary for it to require compliance with its order.

The third school, of which I am an earnest member, has adopted as its chief tenet the belief that when Congress ordered the adoption of "the plan" that it knew exactly what it was doing. That its clear and precise purpose was to bring about the consolidation mainly of non-competitive and connecting lines, that the public might secure the benefits which flow from improved through service, by the substitution of a single line for the multiple haul, and from the economy ordinarily resulting from large business done by wholesale, in contradistinction

to small business done by retail, without the public being required to sustain the enormous loss inseparably connected with the destruction of competition and the establishment of monopoly; and that the grant of power to the Interstate Commerce Commission is entirely adequate to enable it to require such a grouping of these properties as it has been ordered to make.

As to the purpose of Congress, this has been made clear in each paragraph of this section.

With respect to the complete plan for consolidation, there is nothing in the law which indicates that the Commission must wait on the voluntary act of any carrier, or that even acquiescence is necessary to enable it to completely comply with its mandate. Assumption that this legal machinery was set in motion only for the purpose of permitting the approval of voluntary consolidations (which would be otherwise contrary to law), is so antagonistic to the rule of reason, as well as to the letter of the law, as to remove it from intelligent controversy.

The Interstate Commerce Act is a remarkable law in the fundamental particular that 48 times it instructs that its administration must be just, and 66

times that it must be reasonable, and yet in few, if any, of the instances where it establishes these requirements, does it attempt to create a measure for the determination of either of them. For example, there is no suggestion as to what is a "just or reasonable charge" for services, nor is any attempt made to create a formula by which such a charge might be determined, and this question has been left for its answer to the untrammelled judgment of 11 Interstate Commerce Commissioners. In like manner, the Congress was compelled to rely on the intelligence and the consciences of the members of the Commission to prepare and adopt a plan for the consolidation of the railways in the public interest.

As additional evidence that this great question was placed by Congress in the hands of the Interstate Commerce Commission for definite action, and was not made subject to the voluntary action of the carriers, paragraph 5 says: "After the hearings are at an end, the Commission shall adopt a plan for such consolidation and publish the same; but it may at any time thereafter upon its own motion or upon application re-open the subject for such changes or modifications as in its judgment will promote the public interest."

The only remaining point is whether the imposition of this duty was accompanied by the power to require its accomplishment. The answer to this question is found in a paragraph of this section which says that "the carriers affected and any corporation organized to effect a consolidation approved and authorized in such order shall be relieved from the operation of the Anti-Trust laws" and of all other restraints or prohibitions by law, state or Federal,

in so far as may be necessary to enable them to do anything authorized or required by any order made under and pursuant to the foregoing provisions.

This gives to the Interstate Commerce Commission the power to suspend the operation of the laws of any State, and the Sherman and Clayton Federal Anti-Trust laws. These are perfectly good laws, created for the protection of the public from the evils of monopoly. When Congress entered the twilight zone between Federal and State power and authorized the suspension of state laws, it exercised one of the supreme powers conferred upon it by the Constitution and which, like the right of "eminent domain," can only be justified as being in the public interest.

Congress was careful in giving this authority to the Commission to say it was only to be exercised "in so far as may be necessary to enable them to do anything authorized or required by any order made under and pursuant to the foregoing provisions of this Section," and by necessary implication was not to be exercised when these conditions did not exist.

The power to suspend the Sherman and Clayton Anti-Trust laws is inseparably connected with the duty to enforce them with respect to any consolidation which violates either of them and is not approved of by the Commission. This is made clear as to the Sherman Anti-Trust Act by the provision in section 16 of the Clayton Act which bars the public from seeking relief in the courts from any violation of this Act "in respect of any matter subject to the regulation, supervision or other jurisdiction of the Interstate Commerce Commission." The Commission is thus armed

with a sword of such tremendous effectiveness that practically no carrier part of a system which has resulted from acquisition of control of one carrier by another could successfully resist the will of the Commission, as to any separation or bringing together of carriers which it might require in carrying out the instructions of Congress.

The power to suspend these laws has often been effectively exercised by the Commission after it had determined that it was necessary to do so in the public interest, even to the extent of setting aside decisions of the Supreme Court which had previously determined that these laws had been violated, and at least in one great case, in effect, reversed an opinion of our court of last resort, by suspending the operation of the law which that court had said had been transgressed. This action of the Commission was so plainly justified that it was not even contested. With the record of this test of strength before it, the Commission need never hesitate for want of power whenever the public interest appeals to it for protection against any injury flowing from an unlawful grouping of carriers.

The law is complete as it now stands and there is nothing more for Congress to do, except perhaps again to remind the Commission of its duty with respect to lawful consolidations, and also that its authority to suspend the operation of the Anti-Trust laws, with respect to any railroad consolidation or control, does not mature, unless the conditions exist which are made precedent by the law, and that any attempt by the Commission to suspend these laws when these conditions do not exist will be an act "ultra vires."

Dwellings for Employes of a Texas Steam-Electric Plant



At the steam generating plant of the Central Power and Light Company on Devils River near Del Rio, Texas, fourteen houses have been erected for employes and their families. Located on a hill overlooking the plant and built on lots ranging from 50 to 75 feet in width, each house has an individual exterior, with inside arrangements similar and all built with a view to neatness, roominess and convenience. Seven are four-room houses, six have five rooms each and one, the home of the chief engineer, has six rooms. In each house, living room and dining room have walls of Sheetrock stippled with plastic paint; kitchen and bath are enameled and bedrooms are papered. Sufficient electrical outlets are installed for all appliances and each house is fitted with electric refrigeration, electric range and electric water heater.

As the steam plant is located at some distance from Del Rio and as it requires a crew of 16 men working three shifts of eight hours each to operate it, living quarters were provided adjacent to the plant.

"A Labor Policy for the South"

WHILE Southern industry should develop its labor program in accordance with local needs and circumstances, there is no more justification for setting up a special labor policy for the South than for any other section of the country, declared Magnus W. Alexander, president of the National Industrial Conference Board, New York, last week in an address before the Institute of Public Affairs of the University of Virginia.

"Sound labor policies," Mr. Alexander said, "will not be different when applied in the South or the North, the East or the West; in manufacturing or mining, in transportation or agriculture; in industrial or commercial occupations. The specific methods of their application, however, will in part be determined by local considerations and similar circumstances. Thus, the South has its perplexing racial problem, which must necessarily affect its labor problem, and living standards and living costs in the South are different from those in other sections of the country. Climatic and such other differences as regulatory legislation, tax burdens on business enterprise, opportunities for vocational education and matters of like character, all of these factors bear directly on the determination of individual or group labor policies.

"Because of its more recent rapid growth, Southern industry may well profit from experience of industry in other parts of the country in working out its labor policies. It would, however, be a pity if Southern industry should merely copy without at the same time exercising its own initiative in developing sound ideas responsive to its own social and industrial status and potentialities. If its labor policies are predicated upon the fundamental objectives which long experience has shown to be required in our civilization and in our time and shaped to suit its own local characteristics, the South will advance a long way in the direction of an adequate solution of the vexing problem of labor management and will create a solid foundation for its future social and industrial prosperity and growth."

Among fundamental objectives of a sound labor policy Mr. Alexander included just and adequate remuneration of employees; establishment of safe, sanitary and otherwise attractive conditions of work; maintenance of satisfactory employer-employee relations, and rendering of loyal and efficient service by the employee.

Mr. Alexander pointed out that it is not the height of wages, but their pur-

chasing power in terms of goods and service, that must be maintained. Reductions in wages, provided the cost of living declined proportionately, would be advantageous to both business and wage earners. "So long as the workers' standard of living is not reduced by a reduced money wage," said Mr. Alexander, "the latter will give American industry a better chance in competing in the world's markets and thereby afford wage earners a better hope for regularity of employment." Further:

"Throughout American industry, there is now a greatly increased interest on the part of employers in the well-being of their employees. This interest is in part the result of the desire to reduce wasteful labor turnover and to maintain a stable and efficient working force, but in larger part the consequence of the growing social-mindedness of American industrial management and its realization of both its economic responsibility to the individual or stockholder owners of the business enterprise and its social responsibility to the working men and women in its care during a large part of the working day. This social viewpoint is rapidly spreading in American industry and is contributing largely to improvement in conditions under which wage earners work, as well as to a better understanding of the complex problems arising out of employment relationship.

"When an industrial establishment is small and direct contact between management and the workers is feasible, the problem of maintaining satisfactory relations is largely personal. In the case of larger establishments, however, this becomes increasingly impracticable, making it necessary to devise effective substitutes for personal contact, which will, nevertheless, stimulate employees to understand and appreciate managerial policies and to work cheerfully under them. Appreciation by both management and the workers of their inter-related interests is essential, since business enterprise cannot function successfully in an atmosphere of discord and dissatisfaction. Resort by either side in the employment relation to measures intended to compel compliance with specified demands is a form of economic waste and social maladjustment, which industry has sought to eliminate by developing mutual recognition of common interests and a spirit of voluntary cooperation. It is largely through the payment of adequate wages and the maintenance of attractive conditions of work that this objective of cooperative effort is obtained.

"In asking for efficient service from the worker, management is rightfully seeking a proper labor return for its wage expenditures and a cooperation designed to promote success of the industrial enterprise and the performing of an adequate social service, even though management in its effort is fundamentally prompted by the profit motive. In the end, its financial success will also benefit the employees."

Mr. Alexander made it clear that development and application of labor pol-

icies not only come within the special province of management, but that best results are obtained when management works out the solution of such problems in accord with special requirements of the individual business enterprise.

Enid Office Building

Concrete is being poured for an 11-story and basement office building being erected in Enid, Okla., for the Enid Building and Investment Company, in which N. E. Crumpacker and other local capitalists are interested. The structure will cost about \$500,000 complete and is designed to care for office requirements of a number of corporations now establishing offices in Enid, par-



\$500,000 Structure Under Construction at Enid, Okla.

ticularly oil companies operating in western Oklahoma. The building is to be of reinforced concrete and steel and is expected to be completed by January 1, 1931. Built-in lights for exterior lighting will be installed. Roy W. Shaw is architect; D. C. Bass & Sons Construction Co., general contractor, and the Hackney Iron & Steel Co., contractor for steel, all of Enid.

Birmingham Pipe for Gas System

Birmingham, Ala.—The Southern Natural Gas Corporation of this city has awarded contract to the McWane Cast Iron Pipe Co., Birmingham, for cast iron pipe for several natural gas distribution systems in Alabama. The order is said to involve approximately \$110,000 and it is understood that the McWane company will begin production at once, making the pipe in several sizes.

Commercial Cotton Crop of the United States

*Extracts From Report of Secretary Henry G. Hester of the
New Orleans Cotton Exchange for Crop Year 1929-1930*

THE commercial cotton crop of the United States for the year ending July 31, 1930, amounted to 14,513,672 bales, showing a decrease under the marketing for 1928-29 of 1,271,684, an increase over 1927-28 of 69,738 and a decrease under 1926-27 of 4,692,257.

The decrease compared with last year was entirely in Texas only, the other Gulf States showing a gain, while the Atlantic States were practically the same.

These comparisons refer to the commercial crop or amount marketed, and not to growth. In other words, the growth as indicated was 15,764,000, whereas the commercial crop was 14,514,000, or 1,250,000 bales less.

The crop was a shade better than last year with probably not so great a quantity of low grades, though, as a whole, the average was not appreciably different.

In Texas and Oklahoma, the average was Middling to Strict Middling; in Louisiana, Arkansas and Mississippi, Middling, though the Memphis district, which embraced handlings from most of the Gulf States, reported an average of Strict Low Middling, while in the Carolinas, Georgia, Alabama and Virginia, the average was Strict Low Middling to Middling with a leaning towards Strict Low Middling.

The season has been the most remarkable on record. It started with an unprecedented rush of cotton to market, until by the close of October nearly 7,500,000 bales had been shipped from plantations, comparing with about 6,600,000 last year and about 6,600,000 in the monster crop season of 1926-27. Meanwhile, the demand for American cotton abroad had lapsed in favor of cheaper foreign growths, and consumption by domestic mills, which had run

ahead of last year handsomely up to the close of October, seriously decreased from month to month during the remainder of the season.

Whatever may be the result of the Farm Board's efforts to help the market in the future, the fact remains that it has appeared to have no influence on market values thus far, as the season closes at the lowest point, the average July value of middling, seven-eighths inch staple, in the 10 designated markets showing a decline of 6.08 cents a pound, or, say, more than \$30 a bale.

What with the unfavorable conditions on all sides, we have not only done a poor business but we have failed to sell our production to such an extent that our carry-over in this country has been increased by 2,164,000 bales.

The question as to which is best for farmer and consumer alike, stabilization, or the natural ups and downs of the world market, is perhaps in a fair way of solution.

Of the exports, which in round numbers amounted to 6,853,000 bales, a falling off from last year of 1,427,000, Germany again led with 1,797,000, a reduction from last year of 153,000. We sent to Great Britain 1,269,000, which was under last year by 593,000. France took 827,000 bales, which was ahead of last year by 27,000; to Italy we exported 673,000, a decrease of 57,000. Our exports to the Orient were 277,000 bales under last year, amounting to 1,247,000 against 1,524,000.

The average grade of the crop was Strict Low Middling to Middling, and the average price obtained for the crop, exclusive of linters, based on the 10 markets designated by the Secretary of Agriculture was 16.85 cents per pound, a larger average than would seem to be justified by the 12 months' course of the

market because a large per cent of the crop was marketed earlier in the season.

The average value of Middling based on the 10 markets was 17.24 cents, comparing with 18.92 last year, 19.72 year before last, and 12.96 in 1926-27.

The average commercial value per bale of lint cotton was \$88.10 against \$96.92 last year, and \$104.29 year before last, and \$66.73 in 1926-27.

TOTAL VALUE OF THE CROP.

	Bales	Values
1929-30	14,513,672	\$1,211,217,737
1928-29	15,785,356	1,447,632,705
1927-28	14,443,934	1,440,514,259
1926-27	19,205,929	1,230,512,367
1925-26	15,614,707	1,550,811,562
1924-25	14,698,356	1,739,593,374

These values which embrace the commercial crop, of lint and linters only, do not include the value of the seed. Thus the value of the crop for the past year as stated was \$1,211,217,737; if the value of the seed be added we should have a total of \$1,422,224,737. Last year, the total including seed was \$1,723,120,795 and the year before it was \$1,659,609,259.

The story of American mills has again been the reverse of satisfactory. The cotton manufacturing industry, along with general business of the country at the moment, is poor, having suffered perhaps in the average more than others, with the Northern mills more depressed than those in the South. There is an underlying feeling of improved conditions later on. It is believed that the needed curtailment of output for months past should be reflected in the near future in a more satisfactory margin as between price of the raw material and the finished product and that with seasonal improvement in business this fall the industry should be on a more profitable basis than for some time past.

NORTHERN MILL TAKINGS AND CONSUMPTION AMERICAN COTTON

(Including Linters), Year Ending July 31.

	This year	Last year
Stocks beginning year.	360,000	414,000
Takings year	*1,713,000	*1,976,000

Consumption, year	2,073,000	2,390,000
Stocks close year	*1,739,000	*2,030,000
Stocks close year	334,000	360,000

*Exclusive of foreign and inclusive of California.

SOUTHERN MILL TAKINGS AND CONSUMPTION AMERICAN COTTON

(Including Linters), Year Ending July 31.

	This year	Last year
Stocks beginning year.	747,000	631,000
Takings for year	*5,013,000	*5,739,000

Consumption year	5,760,000	6,370,000
Stocks close year	*4,951,000	*5,623,000
Stocks close year	809,000	747,000

*Exclusive of foreign and California consumption.

CARRY-OVER JULY 31.

	1930	1929	1928
Southern mills	809,000	747,000	631,000
Counted interior towns	719,000	250,000	404,000
Uncounted towns and plantations	977,000	320,000	552,000
Total held in cotton belt	2,505,000	1,317,000	1,587,000
U. S. ports	1,548,000	535,000	586,000
Northern mill stocks	334,000	360,000	414,000
European mill stocks	620,000	770,000	735,000
European port stocks and afloat	821,000	1,008,000	1,393,000
Stocks in interior and in transit outside of the cotton belt	73,000	84,000	120,000
Japanese port and mill stocks and afloat	318,000	444,000	463,000
Other foreign mill stocks elsewhere	6,219,000	4,518,000	5,298,000
Total carry-over	6,344,000	4,679,000	*5,472,000
Linters carried over	405,000	284,000	220,000
Lint cotton carried over	5,939,000	4,395,000	*5,252,000

*Revised.

COMMERCIAL CROP BY STATES

	1929-30	1928-29	1927-28
Alabama ...	1,215,000	1,169,000	1,280,000
Arkansas ...	1,389,000	1,336,000	1,213,000
Florida ...	30,000	23,000	21,000
Georgia ...	1,254,000	1,185,000	1,270,000
Louisiana ...	772,000	727,000	595,000
Oklahoma ...	1,141,000	1,309,000	1,119,000
Mississippi ...	1,812,000	1,806,000	1,551,000
North Carolina, etc.*	831,000	999,000	1,023,000
South Carolina ...	800,000	819,000	856,000
Tennessee, etc.†	1,257,000	1,089,000	823,000
Texas ...	4,013,000	5,523,000	4,693,000
Total crop...	14,514,000	15,785,000	14,444,000

*Includes Virginia and Kentucky.

†Includes Missouri, California, Arizona, New Mexico, etc.

Cotton Consumption in the South

The decrease of 630,000 bales in the lint cotton consumed in the South during the past commercial year is the logical result of overproduction coupled with inability to dispose of output at profitable prices.

During the three years ending July 31, 1929, the South used up 15,542,000 bales of lint cotton against 12,504,000 for the previous three year period, an excess of 3,038,000 bales.

With poor trade the world over, and a general slackening of the prosperity that had marked the business of this country, resistance by the Southern cotton industry, after the first few months of this season, became no longer possible and shorter time with lessened production was a natural result.

	Lint cotton	Linters	Total
Last year ...	5,286,000	337,000	5,623,000
This year ...	4,656,000	295,000	4,951,000
Decrease this year	630,000	42,000	672,000

The takings of American cotton by Southern mills for the year were in round figures 5,013,000 bales, compared with 5,739,000 last year a decrease of 726,000 bales.

CONSUMPTION AMERICAN COTTON BY GEOGRAPHICAL DIVISIONS.

	1929-30	1928-29
United States—North...	1,739,000	2,030,000
United States—South...	4,951,000	5,623,000
Foreign	7,337,000	8,656,000
Total American for year	14,027,000	16,309,000

SOUTHERN CONSUMPTION OF AMERICAN COTTON.

States	No. Mills*	Looms†	Spindles‡	1930	1929
Alabama	98	34,951	1,849,655	590,367	632,445
Arkansas	5	603	39,968	23,060	22,395
Georgia	162	56,068	3,237,360	1,111,223	1,255,672
Kentucky	4	1,462	82,728	33,211	34,902
Louisiana	3	2,429	87,626	33,417	44,435
Mississippi	14	3,676	150,496	38,623	44,142
Missouri				23,029	35,152
North Carolina	406	86,318	6,014,141	1,370,369	1,608,036
South Carolina	201	133,033	5,613,154	1,118,339	1,294,138
Tennessee	26	8,682	604,296	258,285	273,758
Texas	27	5,958	269,800	124,901	151,349
Oklahoma	2	558	30,912	16,028	16,803
Virginia, etc.	9	18,978	676,740	210,002	210,538
Totals	957	352,716	(a) 18,656,870	4,950,854	5,623,265
Less consumed and taken from Southern Seaports and included in port receipts.....				435,195	947,163
Net consumption to be added to crop.....				4,515,659	4,676,102

*Mills in operation only.

†Employed in mills in operation.

(a) Spindles working American cotton only.

AMERICAN COTTON CROP FOR FOUR YEARS.

	1929-30	1928-29	1927-28	1926-27
Port receipts	8,815,930	9,557,256	8,556,783	12,902,055
Overland to mills.....	1,182,083	1,551,998	1,202,932	1,628,931
Southern consumption	4,950,854	5,623,265	5,316,768	5,471,391
	14,948,867	16,732,519	15,075,883	20,002,377
Less taken by Southern mills from ports	435,195	947,163	631,949	796,448
Total crops	14,513,672	15,785,356	14,443,934	19,205,929
Exports—				
Great Britain	1,269,240	1,862,345	1,439,771	2,582,638
France	827,675	800,339	899,302	1,021,562
Continent and Channel*.....	4,558,867	5,340,012	5,256,107	7,366,051
Canada (a)	196,854	277,031	235,228	273,276
Total exports	6,852,636	8,279,727	7,830,408	11,243,527
Stocks close of year.....	1,547,708	534,810	586,718	923,420
Northern mill takings.....	1,713,119	1,975,706	1,843,130	2,457,436
Average gross weight of crop per bale —pounds	522.59	521.21	516.73	514.95

*Including to Mexico, Japan and China.

(a) Net.

WORLD'S VISIBLE AND INVISIBLE SUPPLY OF AMERICAN COTTON.

	1930	1929	1928
Mill stocks in U. S. close July	334,000	360,000	414,000
Mill stocks in Europe close July	620,000	770,000	735,000
	954,000	1,130,000	1,149,000
Japanese port and mill stocks	318,000	444,000	463,000
Other foreign mill stocks..	125,000	161,000	174,000
	1,307,000	1,735,000	1,786,000
Visible supply American ..	3,088,000	1,793,000	2,383,000
Total visible and invisible supply close July, including Japan and other foreign stocks	4,485,000	3,528,000	4,169,000

WORLD'S CONSUMPTION AMERICAN COTTON.

	1929-30	1928-29
Visible and invisible beginning year	3,084,000	3,706,000
Japan stocks and transit	444,000	463,000
Visible and invisible, including Japan ...	3,528,000	4,169,000
In sight, year.....	14,904,000	15,668,000
	18,522,000	19,837,000
Visible and invisible close year, including Japan stocks and afloat	4,485,000	3,528,000
	14,037,000	16,309,000
Burnt at ports.....	10,000	
World's consumption American cotton...	14,027,000	16,309,000
Lint cotton consumed...	13,108,000	15,256,000
Linters consumed.....	919,000	1,053,000
	14,027,000	16,309,000

*Includes 11,000 decrease in transit and 22,000 new at ports.

Country Now Producing Twice As Much Pig Iron As During 1921 Depression

Figures released August 11 by the American Iron and Steel Institute show that for the first half of this year the production of pig iron was 18,055,000 tons. While this is a decrease of 3,349,000 tons compared with the record output set for the first six months of 1929, it is not as bad as the figures indicate. Should the production recorded for the first six months of 1930 continue at the same average rate for the remainder of

the year, the total will be comparable to the output of 1927 and 1925, and will be 5,000,000 tons ahead of 1924. An important factor to remember is that during the depression of 1921 the production of pig iron for the first half of that year reached only 9,530,000 tons, or about half the pig iron output for the first six months of 1930. Estimated production of the Southern States for the first half of this year was 2,425,000 tons, which is only about 25,000 tons below production of 1929 and nearly three times the six months' output of pig iron in the South before the depression year 1921.

Contracts on \$20,000,000 Pipeline

Pryor, Okla.—A contract has been awarded by the Ajax Pipe Line Co., Springfield, Mo., to the Austin Company, Cleveland, Ohio, to build the first of a series of 9 pumping stations on a \$20,000,000 oil pipe line under construction from a point near Tulsa to Wood River, Ill. The stations will cost about \$200,000 and will be equipped with 10-, 8- and 1½-ton cranes. It is understood that contract has been awarded to the Chicago Bridge & Iron Works for tanks.

A Suggestion to Southern Pecan Growers on How to Expand Their Market

A recent survey by the United States Department of Agriculture indicates possibilities for further expanding the pecan market to take care of expected increases in production in the near future. In addition to 12,000,000 pounds of improved varieties sold unshelled to the consumer, about 38,000,000 pounds of seedling varieties are produced annually and shelled commercially.

Most of the improved varieties are produced in the Southern States east of the Mississippi river.

According to the survey, average per capita consumption of pecans is less than one-third of a pound per year, and although the pecan is recognized for its high quality, less than 5 per cent of the nuts eaten in the United States are pecans. The pecan is said to be little known in many of the smaller towns and villages in the North and in the poorer sections of many cities; many stores carry pecans in stock only during the holiday season.

Practically no advertising effort has been made to introduce marketing; and distribution of pecans has not been highly centralized as in the case of certain other nuts. Dealers are of the opinion that better grading by growers and shippers would stimulate trade. A main reason has been that the pecan has been considered a luxury nut and prices have been higher than for other varieties.

Southern Textile Association

The autumn convention of the Southern Textile Association will open at Greenville, S. C., on October 23. On October 22 there will be a meeting of the textile section of the American Society of Mechanical Engineers. A banquet in the evening will conclude the day's program. Edwin Howard, Greenville, is chairman of the entertainment committee.

New Tariff to Benefit South Florida Growers

Miami, Fla., August 11—Truck growers and farmers of South Florida expect an annual increase in income of approximately \$10,000,000 and a revival of the pineapple growing industry which once occupied thousands of acres later given over to subdivisions, and abandoned, as a result of the passing of the new Hawley-Smoot tariff law. Farming here remains a factor of large importance, as can be testified by the heavy invest-

ments, constantly growing, which are being made by such firms as the Pennsylvania Sugar Co., the White Belt Dairy, and others of like calibre.

The new tariff act will be particularly effective in stimulating the tomato and citrus trade, in the opinion of Capt. J. F. Jaudon, pioneer resident of this section and prominent grower of those crops. While the agriculturists are expecting beneficial results from the act, however, they have taken warning from past experience in other districts and are planning to avoid overproduction.

"Diversify, cut down on the tomato acreage and get into other crops" is the word in this district. Leading growers are trying to educate their neighbors away from specialization.

Duty on grapefruit has been raised from 1 cent under the 1922 tariff to 1½ cents in 1930; on pineapples the duty has been doubled, and on green vegetables the rates have been radically increased, in some cases several hundred per cent.

Two Texas Dams Planned

Kingsland, Tex.—Plans are being made by the Emery, Peck & Rockwood Development Co., Inc., Chicago, Ill., and Austin, Tex., to build two dams in the Colorado River, near Kingsland, according to advices to the State Board of Water Engineers, Austin. These interests took over the Syndicate Power Co. sites on the Colorado and will build the dams there in order to prevent flooding of the graphite mines 12 miles west of Burnet. A low dam will be built at the old Hamilton site six miles above Kingsland for the purpose of generating power, and a few miles above it, near Bluffton, a storage dam will be built to create a reservoir nearly 40 miles long. Highway No. 29 will be rerouted across the top of the latter dam, the company to co-operate with Burnet and Llano counties in its construction. Nearly all flowage rights have been purchased in and around Bluffton and work on the dams is expected to start at once.

Harlingen Built on the Citrus Industry

By HOWARD BARRETT, Chamber of Commerce, Harlingen, Texas.

Harlingen, the city that citrus built, during the last ten years climbed from a population of 1778 to 12,125, a growth of 579.5 per cent. And this growth has directly contributed to development of the fruit and vegetable industry in the Lower Rio Grande Valley, that fertile area in Southern Texas where the city is located.

From this strip of land 70 miles long and ranging in width from 10 to 40 miles there were shipped in the 1929-30 season, which closed July 1, 31,000 carloads of fruits and vegetables, including 4950 cars of grapefruit, the major fruit crop. Government representatives

estimate that within six years the Valley's 6,000,000 citrus trees will be producing annually from 20,000 to 30,000 cars of fruit.

The Southern Pacific and Missouri Pacific lines cross at Harlingen, connecting with Houston, San Antonio and points north, east and west. The city is located 26 miles from Brownsville near the mouth of the Rio Grande River, 35 miles from Point Isabel on the Gulf Coast, 24 miles from Raymondville, the northernmost point of this fertile tract, and 43 miles from Mission, the western outpost of this Lower Rio Grande country.



Harlingen, in the Lower Rio Grande Valley of Texas

Communists Organize Against South

The latest intelligentsia subversive group to be launched in support of communism, reports the American Vigilant Intelligence Federation, is the "Emergency Committee for Southern Political Prisoners" with headquarters in New York City. Continuing, the report says this committee was formed by the Communist John Reed Club. The personnel of the group is composed of many familiar names of socialists and communists.

A recent letter sent out from New York states in part:

"All over the South the authorities are arresting white and colored workers who dare organize unions together or advocate political and social equality.

"This new persecution must arouse the indignation of every champion of workers' rights and race equality. The International Labor Defense, the organization defending the Atlanta and other Southern cases, is making an heroic struggle to carry on its work.

"The Committee whose names head this letter has been formed by the John Reed Club in cooperation with the International Labor Defense for the purpose of assisting this vital work."

On a leaflet enclosed with the letter appear the pictures of the reported communist Southern organizers: M. H. Powers, Mary Dalton, Anna Burlak, Joe Carr and Herbert Newton (negro) with a contribution blank.

It is interesting to note again how socialists and radicals who protest they are not communist, continually join with communists in support of communism.

Bids on \$1,000,000 Courthouse

Beaumont, Tex.—Bids will be opened September 3 by the Jefferson County Commissioners Court to erect the new \$1,000,000 courthouse here, separate proposals to be submitted on the construction, mechanical equipment and electrical work. There will be a central tower and two 3-story wings. Fred C. Stone and A. Babin, both of Beaumont, are the architects. Beaumont contractors estimating include: Herman Weber, McDaniel Brothers and Christy, Dolph & Collins.

\$500,000 Tourist Development

Maryville, Tenn.—Plans have been made and contracts awarded for a \$500,000 tourist development near Amerine Gap in the Chilhowee Mountains, about four miles from Maryville, according to Robert K. Tomlinson of the American Amerine Corporation, Pittsburgh, Pa., owners of the property. Engineers will soon select a site for a 140-

room hotel, 498 feet long and two stories high, plans for which were prepared by Edward Stoltz, Pittsburgh, and general contract awarded to H. C. Fonde & Son, Knoxville, Tenn. In addition to the hotel and clubhouse, a large circular swimming pool and a 16-hole golf course will be provided. William H. Diddel, Indianapolis, Ind., will lay out the latter. The building and 300 acres of the 6000 acres owned by the corporation will be leased to the Smoky Mountains Club, in which Frederick E. Schortemeier of Indianapolis, is interested.

\$15,412,000 Loan to Build Ships

Washington, D. C.—The United States Shipping Board announces a loan to the United Mail Steamship Co., a subsidiary of the United Fruit Co., of \$15,412,500 for building six passenger and cargo vessels to be completed and in operation within three years. Three of the ships will be constructed by the Newport News Shipbuilding and Dry Dock Co., Newport News, Va., and three by the Bethlehem Shipbuilding Corp., New York. The vessels will have a speed of 18 knots.

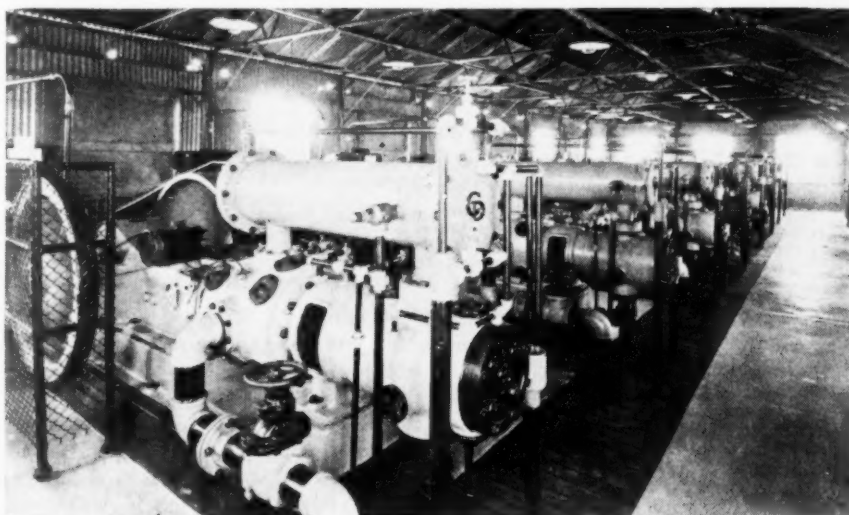
Houston's New Port Tonnage Record

An increase of 30.49 per cent in the tonnage moving over the wharves of Houston, Texas, in the first six months of this year over the same period in 1929, is shown in a total of 7,894,892 tons, valued at \$243,138,565, through June.

"A significant feature of the port's business this year," the Houston Port Register comments, "has been that, while the volume of cotton handled is smaller than last year, the general cargo has been built up to a point where it more than offsets the loss sustained in the decreased cotton shipments."

The tonnage for June, at 1,085,057, is 26.94 per cent heavier than in June, 1929. The export trade for six months was 2,412,403 tons, compared with 1,888,814 tons in the same period last year, while import traffic was 190,488 tons, compared with 164,049. The intracoastal outbound in the first six months last year was 331,226 tons, and this year was 757,919, while "deep sea" tonnage was 6,762,500 in the six months this year, against 5,182,309, in the same period in 1929.

Compressors Aid Gas and Oil Distribution



This group of air compressors was furnished by the Chicago Pneumatic Tool Co., New York, and was installed by the Amerado Petroleum Corporation at Earlsboro, Okla. It is one of many similar installations in the oil fields of the South and Southwest. With the completion of natural gas, gasoline and fuel oil transportation lines to areas remote from these resources large expenditures are being made for compressing stations at intervals along the lines. Also, demand for these products is increasing so rapidly that existing compressing stations are being enlarged with a view to obtaining maximum capacity daily. Heretofore, lines several hundred miles long were unusual; now lines up to 900 miles in length are in operation and some systems with main and auxiliary lines will total, when completed, as much as 2500 miles.

IRON, STEEL AND METAL MARKET

Stationary Conditions in Steel

Pittsburgh, August 11—[Special.]—Conditions in the steel trade remain stationary, striking a general average of buying and production. In the volume of buying there has been no material change since late in June while in production there has been no visible change during the five weeks since the holiday.

For several months there had been decreasing activity and the trade seems at least to have rounded a turn by getting into a straight stretch. As to general trade activity indicated by the volume of steel tonnage the composite is a very blurred one as some lines of consumption are much more active than others. Large diameter line pipe for natural gas lines is being produced at capacity, with order books filled for some time to come, and medium sized line pipe, for gasoline lines, is at close to capacity. Structural fabricating shops as a whole have continued quite active and in the Pittsburgh district a little increase is reported in the last two or three weeks.

On the other hand, the automobile and farm implement industries are at low rates, partly seasonal, and there is now little freight car building. There is much general line buying of steel, which cannot be followed in detail. Last week's resumption by various automobile factories which had been taking vacations brought little business to the steel mills. The resumption was not a heavy one and the factories apparently had some stocks of steel and parts. Increased production of automobiles, being forced by stoppages, may not continue.

July production of Bessemer and open-hearth steel ingots as officially reported was 3,933,399 tons, representing 56.35 per cent of capacity, confirming estimates made during the month that the rate was slightly over 55 per cent of capacity. There was a sharp decrease, 18 per cent, from the June rate, and a decrease of a full one-third from the peak rate of last February. The rate was the lowest since the summer of 1924, but was above average annual rates in 1922 and 1921.

According to precedent it is now fully time for steel to begin showing seasonal improvement if there is to be any. Recently predictions were made with some show of confidence that there would be seasonal improvement at least, but doubts are now beginning to arise. A seasonal improvement beginning much later than this would make little impress upon the half-year total of steel activity as regularly there is a tapering off in the last two months of the year.

The unparalleled drought is expected to have an unfavorable influence on farmer buying, in sheets, pipe, nails, etc., and in agricultural implements. Already some damage has been done to canning crops, but not a great deal. To date tin plate production has not been much under last year.

Steel producers quite generally are committed to a policy of maintaining wages. Apparently one large interest was considering the desirability of reducing wages, on the ground of adjusting them to a lower cost of living, but seems to have been convinced by the attitude of other steel producers that this would not do.

Finished steel prices in general show no quotable change, but several lines are regarded as weaker, what were formerly inside prices being now given to a wider circle of buyers. The general trend is in the direction of easier prices. Large rivets, for structural work, have been reduced \$3 a ton from 2.90c to 2.75c, partly on account of cutting and partly to put them in line with recent declines in merchant steel bars, the raw material.

Just why steel sellers do not stand their ground better is not readily explained, as no additional business is created by lower prices and buying as a rule is in such small quantities that a given seller gets little ahead by cutting prices since competitors soon come to the same level. Steel company earnings are off rather sharply this quarter from last quarter and usually low earnings have a salutary effect as to price maintenance.

Birmingham Situation Unchanged

Birmingham, Ala., August 11—[Special.]—While no change is noted in pig iron and steel, a better feeling pervades the district and expectations are that the next 60 to 90 days will show a gradual return to more normal conditions. Sales of pig iron are hand-to-mouth but the aggregate is slightly greater than a month or so ago. Addition to the surplus foundry iron stock has ceased. Steel manufacturers are accommodating regular customers who need foundry, two or three furnaces regularly in basic production being turned to foundry. Base price of pig iron in the home territory has been kept steady, \$14, No. 2 foundry. Concessions are made to meet competition in other territory. No sales worth mentioning have been made recently for shipment from this section. Survey shows that some of the steady melters

are shipping their product steadily and still adhere to the policy of making up stock as orders are received. These shops will round out a good summer.

A few shapes of steel are enjoying fair patronage. Including ingot production and finishing mills operations it is estimated there is a little more than 60 per cent capacity operation in this section. Fabricators of structural shapes and plate still report a little activity with several specifications in sight which give much encouragement. Shipments of structural steel are steady, industrial projects throughout the South, Southeast and Southwest being solicited on this business.

Road building activities require reinforcing bars, this district shipping steadily on the product. The state highway department is considering a certain amount of road building and a few overhead bridges of concrete.

QUOTATIONS ON PIG IRON.

No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$14.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$14.50; iron of 2.75 to 3.25 per cent silicon, \$15.00; iron of 3.25 to 3.75 per cent silicon, \$15.50.

OLD MATERIAL.

Old steel axles	\$19.00 to \$20.00
Old iron axles	17.00 to 18.00
Old steel rails	11.00 to 12.00
Heavy melting steel	10.75 to 12.00
No. 1 cast	12.00 to 13.00
Stove plate	10.00 to 11.00
No. 1 railroad wrought	10.00 to 10.50
Old car wheels	10.00 to 11.00
Old tramcar wheels	11.00 to 11.50
Machine shop turnings	7.50 to 8.50
Cast-iron borings	7.50 to 8.50
Cast-iron borings (chem.) ..	12.00 to 13.00
Re-rolling rails	12.50 to 13.00

Natural Gas in Production of Formaldehyde

In connection with its study of the best methods for utilization of natural gas under circumstances such that it cannot be used directly for fuel, the United States Bureau of Mines, at its Pittsburgh Experiment Station, has investigated its use in the production of formaldehyde. This compound has extensive use in manufacture of synthetic resins such as bakelite, from which is fabricated a multitude of useful products. Early work showed that traces of formaldehyde are formed when mixtures of methane (the principal constituent of "dry" natural gas) and air are suitably heated. Later work showed that certain gaseous catalysts such as the oxides of nitrogen enormously increased the yield of formaldehyde. The present work has shown, however, states the Bureau of Mines, that until further developments are made, this method is impracticable because of excessive cost of the nitrogen oxides required to produce a given quantity of formaldehyde.

AVIATION, AIRPORTS AND AIRWAYS

Bids Asked on Air Mail Service

Washington, D. C.—The Post Office Department receives bids until August 25 for the transportation of air mail under contract as follows: New York by way of Philadelphia and Pittsburgh, Pa., Columbus, Ohio, Indianapolis, Ind., St. Louis and Kansas City, Mo., Amarillo, Tex., (or from St. Louis via Tulsa to Amarillo, either or both routes) and Albuquerque, N. M., to Los Angeles, Cal., and return, a distance of approximately 2559 miles one way; also from Atlanta, Ga., via Birmingham, Ala., Dallas, Fort Worth and El Paso, Tex., and via such points in New Mexico and Arizona as may be designated, to Los Angeles and return, approximately 2008 miles one way. According to W. Irving Glover, Assistant Postmaster General, these two new transcontinental lines are to be operated under the Watres Act recently passed by Congress and approved by the President. Contracts will be awarded on a space-mileage basis instead of on a poundage basis required under the old law.

New York-Richmond Air Passenger Service

Richmond, Va.—Beginning August 18, the Eastern Air Transport, Inc., Atlanta, Ga., will operate a passenger service between New York and Richmond, with stops at Washington, Baltimore and Philadelphia. The line will use trimotored planes of 11-passenger capacity and will cover the route in three and a half to four hours. Passengers will be permitted 30 pounds of free baggage. The Richmond terminal will be at the Richard Evelyn Byrd field, while the Washington Airport will be used at Washington and Logan field at Baltimore. Both the Newark and North Beach airports will be used for New York, and the Central Airport at Camden, N. J., for Philadelphia. Announcement will soon be made as to fares, schedules and ticket agencies.

\$415,000 Airplane Deal

St. Joseph, Mo.—A contract representing a conditional order for airplanes to cost about \$415,000 has been entered into by the Bird Wing Commercial Aircraft Co. of this city. The planes were ordered by the Martin Airport Corp., Portland, Ore., which plans to take over the Mid-America Flying Service, a Bird Wing subsidiary here. The contract

calls for the manufacture and delivery of 10 planes corresponding to the present Bird Wing Imperial model, delivery to be made by March 24, 1931. Conditional upon the satisfactory completion of this part of the order, 60 additional planes of the same type are to be delivered at the rate of 5 per month for a year. The planes will be powered with Wright J-6-5 motors. Pending the completion of a new administration building at Rosecrans Field here by the Fairfax Airports, Inc., of Kansas City, Mo., lessees, in which the Martin organization expects to obtain permanent offices, that company will have offices at 402 Corby-Forshee Building.

\$450,000 Army Airplane Order

Wheeling, W. Va.—An order has been received by the Fokker Aircraft Corp., Maj. G. C. Lightner, manager, for 20 single-engine cargo planes for the War Department, Washington. The first plane is expected to be off the blocks within 60 days and the others to follow at intervals of 10 days. E. T. Wilson, assistant secretary of war in charge of aeronautics, placed the order for the planes, which will be manufactured at the Fokker plant at Glendale, near this city. The contract involves about \$450,000.

Airport at Muskogee, Oklahoma

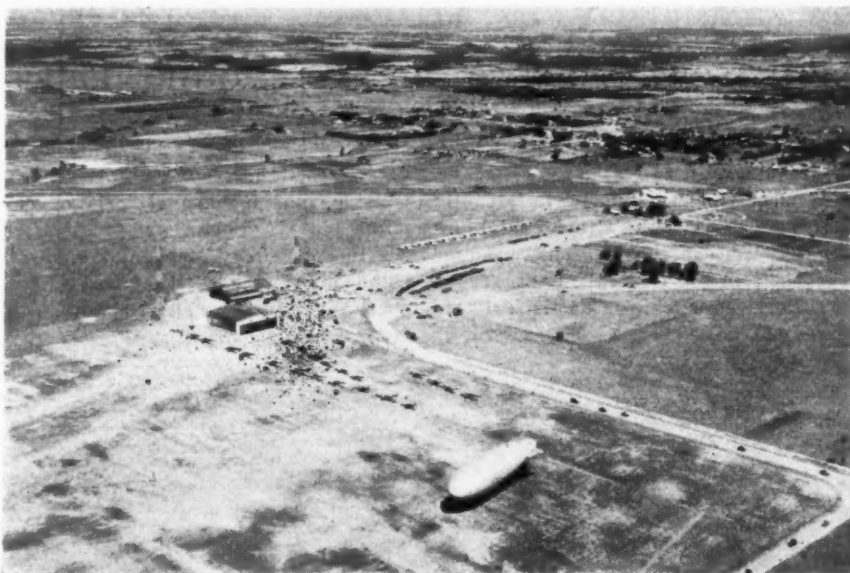


Photo by U. S. Army Air Service

Hat Box Field, a joint army and municipal airport, located about two miles west of the center of the business district of Muskogee, Okla., has an all-way landing area, comprising 370 acres, of level terrain, with a thick Bermuda turf, making it available for landing and take-off in all weathers. The minimum effective landing area provides a distance of 3000 feet and the maximum totals 3700 feet. Prompt service for refueling planes and an adequate repair shop add to the efficiency of the port. Lighting equipment includes boundary, beacon, flood and obstruction lights. The Army Air Corps operates a complete meteorological station and radio station. Hat Box Field is stated to be the midway station for planes flying from Texas to St. Louis and to Kansas City.

The municipal hangar is 100 by 115 feet, open-end type, equipped with concrete aprons at each entrance. A two story lean-to the full length of the hangar provides for the shop, office, and rest room space on the ground floor. Sleeping quarters, shower baths and rest rooms are available on the second floor. A waiting room for passengers and a branch telegraph station are features. No landing fees are charged at the field and the city provides free transportation to and from Muskogee.

HIGHWAYS AND MOTOR TRANSPORT

Distributing Reports for Road Congress

Washington, D. C.—Beginning the distribution of more than 500,000 copies of reports on world highway problems, officials in charge of the Sixth International Road Congress to be held in Washington, D. C., from October 6 to October 11, enter the final stage of preparation for the reception of delegates. The Congress will be held under the auspices of the Permanent International Association of Road Congresses, with headquarters in Paris, and the immediate direction of the American Organizing Commission, Roy D. Chapin, president, Washington. Seventy-six separate reports, representing the opinions of 170 authorities on questions of highway construction, design, material, maintenance, administration, finance and

traffic, will form the basis for discussion at the sessions. The reports will be printed in French, German, Spanish and English, the four official languages of the Congress.

\$2,000,000 Texas Road Contracts

Austin, Tex.—Contracts have been awarded by the State Highway Commission for 31 road and bridge projects covering more than 300 miles of highway and involving a cost of more than \$2,000,000. The work includes 22 projects covering a total of 247 miles of grade and drainage construction to cost in excess of \$1,288,000; three projects embracing a total of 30 miles of concrete to cost \$656,286; three bridge and culvert projects to cost \$145,926, and three surface treatment projects to cost \$38,979.

Road Contracts Exceed \$1,000,000

Atlanta, Ga.—Contracts have been awarded by the State Highway Commission, J. W. Barnett, chairman, for 11 road and bridge projects involving an expenditure of more than \$1,000,000. The work embraces about 60 miles of paving, grading and surfacing and the construction of 8 bridges. Bids will be opened for additional construction this month.

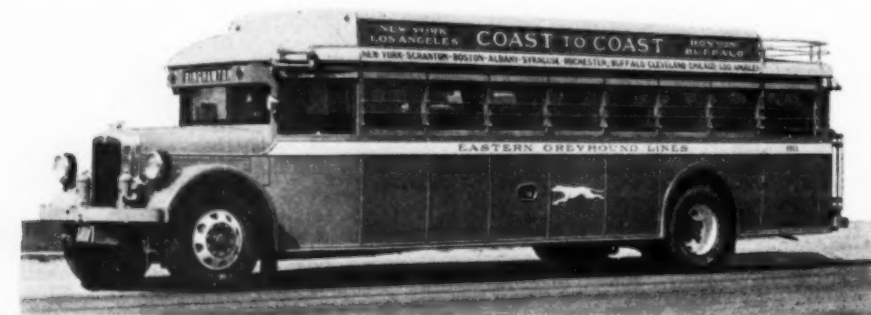
Raleigh, N. C.—A tabulation of bids by the State Highway Commission on 7 road projects covering a total of 40 miles of concrete and 28 miles of grade and drainage construction, indicates the cost will be \$773,502. This is expected to be the last general call for bids this year.

300 New Coaches for Greyhound Lines

General Motors Supplies Rolling Stock for Inter-city Highway Transportation Service

To meet the demands of its steadily increasing service, the Greyhound Lines recently purchased 300 new motor coaches from the General Motors Truck Co., Pontiac, Mich. This is said to represent the largest order for rolling

stock ever placed by a bus line. The buses represent latest developments in inter-city bus transportation and are thoroughly equipped with devices contributing to safety and comfort of travellers, say the manufacturers.



Greyhound Motor Coach of Latest Type

Each coach has a capacity of 33 passengers, and is fitted with attractively upholstered reclining chairs with individual backs and head rests. Seats are spaced far enough apart to give ample leg and knee room and have adjustable foot rests. There is a 5-place parlor car chair at the rear and interior luggage racks are protected with carpet.

stock ever placed by a bus line. The buses represent latest developments in inter-city bus transportation and are thoroughly equipped with devices contributing to safety and comfort of travellers, say the manufacturers.

Luxurious
Interior
of
the
New
Coach



Outside roof luggage rack is of chromium plated, double bar type construction accessible by steps and ladder located above the grill at rear of the coach. Tropic-Aire heating units are controlled from the driver's seat. Seven ventilators are located in the roof and another is at the left of the driver and each coach is equipped with two electric fans.

Average head room inside the coach is 76 inches. Over-all length is slightly more than 32½ feet, wheel base being 250 inches. A 6-cylinder Yellow, model 616, overhead valve engine, developing 150 horse power at 2200 r.p.m. operates with such speed and get-away qualities as to enable the unit, it is said, more than to hold its own on the highway with the modern passenger automobile. Four-wheel Westinghouse air brakes are used, with brake chambers mounted on the axles. A 6-cubic foot air compressor is mounted on the engine. Emergency brake consists of two 11-inch diameter drums mounted on the propeller shaft and operated by a pull-on hand lever. Two gasoline tanks of 74 gallon capacity each are mounted on either side of the frame. Hydraulic type shock absorbers are used on the rear, while air bottles are used on the front.

NEW AND IMPROVED EQUIPMENT

Elevating and Tiering Conveyor

The Clark TwinVeyor, recently introduced by the Clark Trutractor Company, Battle Creek, Mich., manufacturers of gasoline propelled vehicles for industrial haulage, is a portable, flexible, power-driven elevating and tiering conveyor, employing two external spiral tubes turned toward each other by a power head. These carry loads forward rapidly and "perfectly balanced." A



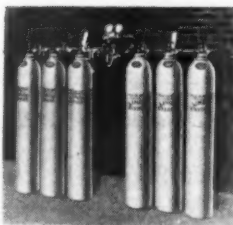
Clark TwinVeyor

Conveying Flour From Boat to Warehouse

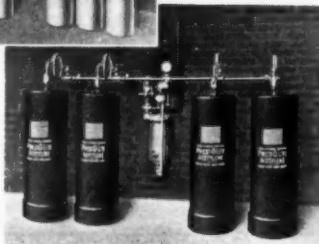
standard unit consists of six 8-foot dual sections and a power head, the section being joined to the assembly with an automatic lock. It may be shifted about by one man and the entire 50-foot line assembled in six minutes. Flexibility is secured by the joints. A hurdle section permits the hooking of any number of 50-foot sections, and spiral chutes are provided to shunt the load from one TwinVeyor line to another without manual handling. An extension cord attached to the power head may be plugged into any power line.

Oxygen and Acetylene Manifolds

To supply small users with an economical means of gas distribution, the Oxweld Acetylene Company, New York, has introduced two small capacity manifolds. One of these, a 6-cylinder oxygen manifold is of the wall type having a duplex feature, so that three cylinders may be changed while the bank of three on the other side is maintaining a supply of oxygen. The other is a 4-cylinder acetylene unit also of the wall type, each cylinder lead having a valve in the header so that cylinders are inde-



Wall Type Manifolds,
6-Cylinder
and
4-Cylinder



pendent. Thus it is possible to use one, two, three or four cylinders at the same time and to replace a cylinder without shutting off the acetylene supply. Each cylinder connection is fitted with Prest-O-Lite flash arrester and the manifold

is supplied with connections for Prest-O-Lite cylinders. The manifolds were designed particularly for use by welding schools and are at present being used in a number of aircraft schools.

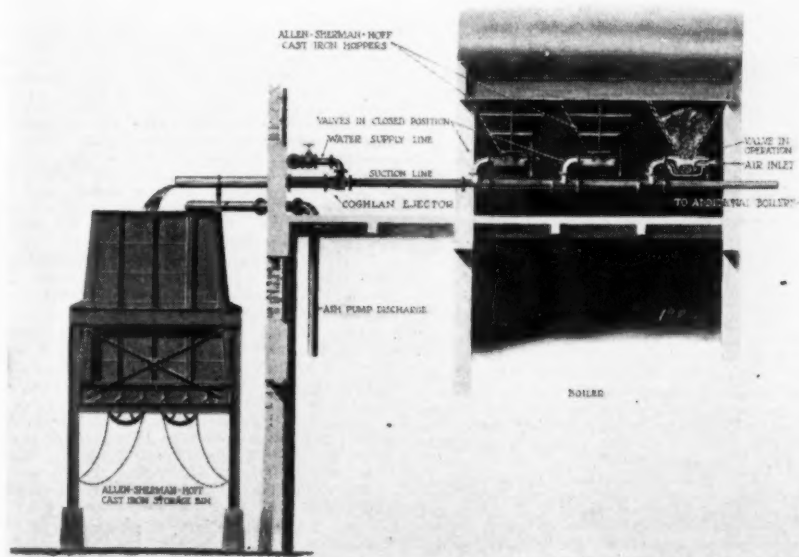
Field Pipe-Line Wrapper

A hand-operated pipe-line wrapping machine for pipes of sizes from 4 to 24 inches has been introduced as the joint product of the Johns-Manville Corporation, New York, and W-K-M Co., Inc., Houston, Tex. The machine has a uniform speed of 15 linear feet per minute and may be used on bonded or unbonded jobs without change. It is carried on spring-mounted rubber rollers which iron out wrinkles or air spaces that may develop in the felt as it comes from the roll on the machine. The felt is applied so as to give a one-inch lap.

Removing Dust and Soot

In a description of the Hydrovac System of dust removal as manufactured by the Allen-Sherman-Hoff Co., Philadelphia, it is pointed out that in the modern powdered-coal-burning power plant a considerable amount of fly dust accumulates behind the last pass of the boiler, also beneath the economizer and air heater, and in the stack breeching or in the dust collector. In the stoker fired plant, dust accumulates at all such points, also siftings accumulate beneath the stoker. Further it is emphasized that the removal and disposal of fly

dust and siftings in a manner preventing the escape of any particles requires a system totally enclosed and absolutely tight. In the Hydrovac System dust and soot are removed in dry condition through an A-S-H wind-swept valve, dust being thoroughly mixed with water and discharged by means of an A-S-H Coghlan type Hydrovactor. Several valves may be connected to a common suction line served by one Hydrovactor. Operation of the system is entirely automatic. A Hydrovactor can be installed in any position and will elevate dust-laden air as required for disposal into an overhead bin.



Showing Application of the Hydrovac System

CONSTRUCTION DEPARTMENT and NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Ala., Mobile—City will acquire 23 acres adjoining airport and installed lighting system; may call \$50,000 bond election to finance lighting facilities and other improvements.

Ark., Fayetteville—City, Aviation Committee, acquired approx. 150 acres 4 mi. south of city on Highway 71 for A-1 airport. 5-29

Fla., Miami—City negotiating to lease site for hangar for army aviation unit.

Ga., Bainbridge—H. L. LeGette, and associates, reported, interested in development airport.

Miss., Greenville—City votes Sept. 1 on \$30,000 airport bonds.

Okla., Clinton—City, reported, approved plans for airport; site being selected. 5-22

Tenn., Kingsport—Dept. of Commerce, Aeronautics Branch, Washington, D. C., surveying sites for airport.

Tenn., Memphis—See Telephone Systems.

Tex., Beaumont—City expend \$70,000 for improving 276-acre airport; initial plans call for grading entire field, erecting administration building, hangar, beacon lights, etc.; plans being drawn by Frank Bertschler, Park Supt., architect to be employed to work out details. 12-19-29

Tex., Dallas—Magnolia Petroleum Co., Magnolia Bldg., acquired Good & Foster Aero Service, Love Field.

Tex., El Paso—Div. of Supplies, Dept. of Commerce, Washington, D. C., opens bids Aug. 18 for complete clearing, grading and conditioning intermediate fields, El Paso to Wink.

Tex., Goose Creek—Chamber of Commerce voted to acquire 200-acre tract, 2½ mi. from city, for airport.

Tex., Randolph Field, Schertz—Kenneth L. Colburn, Inc., Pasadena, Calif., has contract at \$566,820 for 18 standard airplane hangars, including painting. 8-7

Bridges, Culverts and Viaducts

Proposed Construction

Alabama—State Highway Comsn., Woolsey Finnell, Highway Director, Montgomery, has low bid from Matthew Bros., Florala, at \$9524.50 for conc. overhead crossing on L. & N. R. R. at Bay Minette.

Ark., North Little Rock, Little Rock—Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, Mo., completed plans for \$75,000 underpass, Third St.; conc. and steel, 10-ft. walkways.

Fla., Key West—George J. Rosenthal, Miami, granted franchise by Monroe County Comms. to construct toll bridges across unspanned water gaps in overseas highway between No Name Key and Lower Matecumbe Key, est. cost \$13,000,000.

Ga., Columbus—Muscogee County, R. H. Barnes, Clk., receives bids Aug. 27 conc. viaduct over Central of Georgia and Seaboard Airline tracks; 101,214 lb. rein. steel; electrical equipment complete; for underpass under track at Eastview; 19,000 lb. rein. steel; conc. culverts, all on Brown Ave., 15,000 lb. rein. steel.

Ga., Thomasville—City plans expending \$10,000 for bridge work. See Financial News Columns. 7-31

Md., Oldtown—Alleghany County plans steel bridge over Potomac River between Oldtown and Green Spring, W. Va.

Miss., Natchez—Adams County Bd. of Supvrs., W. E. Hale, Clk., receives bids Sept. 2 for reconstructing and 2 additions to bridge over St. Catherine Bayou on Lower Natchez-Woodville road; lately noted bids Aug. 5. 7-31

Missouri—State Highway Comsn. receives bids for 26 bridges. See Roads, Streets, Paving.

Mo., St. Joseph—City plans receiving bids in 10 days for rebuilding Fifth Ave. viaduct over Great Western R. tracks, cost \$10,000 to \$12,000; Hale D. Judson, City Engr.

N. C., Hookerton—War Dept., Washington, approved plans by State Highway Comms., Raleigh, for bridge across Contennea Creek here.

Okla., Tulsa—See Roads, Streets, Paving.

Okla., Tulsa—City Comsn., receives bids Aug. 19 for Boston Ave. conc. viaduct; Victor Cochran, City Cons. Engr.

Tennessee—Dept. of Highways and Public Works receives bids for 10 bridges. See Roads, Streets, Paving.

Tennessee—Dept. of Highways and Public Works, Nashville, authorized construction of timber bridges over Reelfoot Lake Drainage Ditch in Lake and Dyer Counties, Highway 103; T. E. McEwen, State Highway Engr.

Tenn., Dyersburg—Dept. of Highways and Public Works, Nashville, applied to War Dept., Washington, for permit to construct F-rked Deer River bridge on Jefferson Davis Highway here; T. E. McEwen, State Highway Engr.

Tenn., Knoxville—City, George R. Dempster, Mgr., receives bids Sept. 9 for rein. conc. bridge over Tennessee River at Henley St., consisting of six arch spans, six 50-ft. deck girders, abutments, piers, grading, paving approaches, paving bridge, installation of water mains, links to support gas mains, telephone conduits and manholes, power conduits and manholes, lighting system for bridge and approaches with independent system for channel lights and flood lighting system; roadway to be 54 ft. wide, 6-ft. sidewalks; plans from W. W. Mynatt, Dir. of Public Service. 7-31

Tenn., Watauga—War Dept., Washington, approved plans Dept. of Highway and Public Works, Nashville, for bridge across Watauga River near here.

Tex., Bryan—State Highway Comsn., Austin, appropriated funds to reconstruct 155-ft steel span to bridge across Brazos River, Highway No. 21, near Bryan, Brazos County; G. G. Wickline, Bridge Engr.

Tex., Fort Worth—City, O. E. Carr, Mgr., plans widening Vickery Blvd. viaduct over Sycamore Creek, 36 to 80 ft.; City Designing Engr. preparing plans.

Tex., Houston—See Drainage, Dredging and Irrigation.

Tex., Victoria—State Highway Dept., Austin, plans letting contract soon for steel and conc. bridge across Guadalupe River, Victoria, Highway No. 12; cost about \$250,000; G. G. Wickline, State Bridge Engr.

Virginia—See Roads, Streets, Paving.

W. Va., Charleston—State Bridge Comsn., A. C. Klmpel, Secy., Charleston, opens bids Sept. 3 for 2 bridges over Kanawha River at Point Pleasant and St. Albans; C. P. Fortney, Chrmn. 7-24.

Contracts Awarded

Ga., Appling—State Highway Bd., Atlanta, let contract to Ed. Pettus, Exchange Hotel, Montgomery, Ala., for temporary bridge over Little River, connecting Columbia and Lincoln Counties, at \$24,875. 7-17

Mo., Boonville—Missouri-Kansas-Texas R. Co., F. Ringer, Ch. Engr., St. Louis, reported, let contract to Kansas City Bridge Co., Oread-Leslie Bldg., Kansas City, for substructure for bridge over Missouri River, Boonville. 5-29

Tennessee—Dept. of Highways and Public Works, let contracts for 4 bridges. See Roads, Streets, Paving.

Texas—State Highway Comsn., let contracts for several culverts. See Roads, Streets, Paving.

Tex., Crosby—Harris County Comms. Court, Norman Atkinson, County Judge, Houston, let contract to B. P. Panas & Co., Esperson Bldg., \$6532, for 2 conc. culverts at First St., Crosby.

Canning and Packing Plants

Ark., Little Rock—Ozark Fruit Co., B. C. Bates, Owner, foot of North St., will rebuild burned portion of plant.

Fla., Lake Wales—Ridge Citrus Cannery, Inc., capital \$100,000, chartered; H. S. Norman, Pres.; F. M. Campbell, Sec.-Treas.; erect plant 100x200 ft.; cost \$60,000; capacity 2000 cases daily.

Fla., Nocatee—Nocatee Packing Co., T. S. Chatham, Pres., reported let contract to J. A. Perry for citrus packing plant; capacity 4 cars oranges and 6 cars grapefruit daily; cost \$20,000.

Clayworking Plants

Ala., Birmingham—Dixie Fire Brick Co., capital \$50,000, chartered; F. W. Hopkins, 1531 N. 31st St.

D. C., Washington—Bd. of Dist. Comms., Dist. Bldg., receives bids Aug. 22 for pulverizing machinery, etc., for brick making plant at penal institute; until Aug. 14 for two 5 ton crawler type tractors and until Aug. 19 for three steel tanks, 1000 to 4000 gal. capacity.

Tex., Dalhart—G. F. Martin, reported, establish brick plant near Texline.

Concrete and Cement Plants

Mo., St. Louis—Marquette Cement Mfg. Co., Arcade Bldg., reported, let contract to A. D. Gates Constr. Co., 1611 Chemical Bldg., for improvements to plant, 126 Malt St.; cost \$30,000. 7-17

Okla., Tulsa—Missouri Portland Cement Co., H. L. Block, Telephone Bldg., St. Louis, Mo., reported, completing plans for cement plant, ¼ mi. north of McIntyre Airport.

Cotton Compresses and Gins

Ga., Toombsboro—Toombsboro Gin Co. chartered; F. B. Chambers, W. I. Dixon; construct ginnery.

N. C., Wilmington—Eastern Cotton Oil Co., Board of Trade Bldg., Norfolk, Va., reported, acquired 20 acre site near Cape Fear bridge; erect plant.

Okla., Carter—Taylor Gin Co., capital \$30,000, chartered; Forest Lohden, of Port; L. W. King, Sentinel.

Okla., Port—Port Independent Gin Co., capital \$20,000, chartered; James C. Taylor, J. S. King.

Tex., Colorado—Colorado Gin Co., capital \$40,000, chartered; T. N. Morgan, C. B. Williams.

Tex., Shamrock—Lutie Gin Co., chartered; E. R. Tinsley, E. T. Grin.

Tex., Shamrock—Service Gin Co., chartered; Clayton Heare, E. R. Tinsley.

Drainage, Dreging and Irrigation

Ark., Gillett—Southeast Drainage Dist. of Arkansas County, W. P. Miller, Clk., has preliminary survey complete for drainage system.

Ark., Lake Village—Bd. of Directors, Chicot County Drainage Dist., Office of Chicot Trust Co., opens bids Aug. 18 for earth dam across Ditch Bayou near here; approx. 10,000 bd. ft. sheet piling, 14 to 16 ft. long, 2 acres clearing and 11,000 cu. yd. excavation; Dickinson & White, Engr., Rector Bldg., Little Rock.

Md., Baltimore—City, Bd. of Awards, has low bid from Arundel Corp., Pier 2, Pratt St., for maintenance dredging in Baltimore Harbor at \$52,650; Elmer E. Hammond, Harbor Engr.

N. C., Wilmington—U. S. Engr. Office, Wilmington, plans starting dredging intra-coastal Waterway between Wilmington and Georgetown, S. C., about Mar. 1, 1931.

Tex., Galveston—Ch. of Engrs., U. S. Army, Washington, D. C., authorized dredging channel at entrance to Dickenson Bayou, 112,000 cu. yd. material; U. S. Engr. Office, Galveston, soon receive bids.

Tex., Houston—City Secretary opens bids Aug. 27 for constructing new channel for Buffalo River and Franklin Ave. extension, including new bridges and structures therefor; W. E. Monteith, Mayor.

Tex., Winter Haven—Winter Garden Dist. Chamber of Commerce let contract to San Antonio Machine & Supply Co., 325 N. Centre St., San Antonio, for pumping plant on state experiment farm near here.

Va., Hampton Roads, Norfolk—Bureau of Yards and Docks, Navy Dept., Washington, let contract to Arundel Corp., Pier 2 Pratt St., Baltimore, Md., at \$100,000, for dredging at naval operating base.

Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Ark., Paragould—City votes Sept. 22 on municipal ownership and operation of light plant.

La., New Orleans—John R. McGivney, Pur. Agt., New Orleans Public Service, Inc., Baronne and Union Sts. receives bids Aug. 18 for 1½ story, 33x150 ft. hollow tile and brick veneer building Poland and St. Claude Sts., for rolling stock and shop department; cost \$25,000.

Ark., Siloam Springs—Illinois Water Development Co., J. W. Sloan, Pres., Tulsa, Okla., reported, plans \$200,000 development on Illinois River; dam will form lake approximately 3 miles long.

Ga., Hawkinsville—Georgia Power Co., Electric Bldg., Atlanta, advises are planning to construct high tension transmission line from Cochran to Hawkinsville, distance of 10 miles, in connection with recent acquisition of electric distribution station; rehabilitate and redesign distribution system at Hawkinsville.

Ky., Louisville—Bates Expanded Steel Truss Co., East Chicago, Ind., reported, has contract for 2500 tons fab. struc. steel for transmission towers.

Miss., Jackson—Mississippi Power & Light Co., Gulfport, has permit for \$12,000 station; construction started.

N. C., Wilson—McClelland Co., W. Third St., Charlotte, reported, low bidder on steel and rein. conc. turbine foundation and steel and galv. iron generator air duct at power plant.

Okla., El Reno—Citizens Public Service Co., Kansas City, Mo., preparing plans and estimates for electric light plant.

Texas—Emery, Peck & Rockwood Development Co., 208 S. LaSalle St., Chicago, Ill., and 817 Scarborough Bldg., Austin, reported, decided to erect 2 dams on Colorado River in Kingsland section; at old Hamilton dam-site 6 miles above Kingsland a low dam will be erected for generating power and will be known as Arnold Site; few miles above it at Bluffton, huge storage dam will create reservoir nearly 40 miles long, and will be known as Hamilton Site; will reroute Highway No. 29 across top of new dam at Bluffton with co-operation of Burnett and Llano counties; about all flowage rights have been purchased by power company in and around Bluffton and work will probably begin soon; Fargo Engineering Co., Jackson, Mich., Engrs.

Tex., Dallas—Dallas Power & Light Co., reported, let contract to Nashville Bridge Co., foot of Shelby Ave., Nashville, Tenn., for 150 tons struc. steel.

Tex., Fort Worth—Texas Electric Service Co., Electric Bldg., increased capital; will issue 2000 shares, representing \$2,000,000; proceeds to be used for program of expansion in Fort Worth territory.

West Virginia—American Gas and Electric Co., 30 Church St., New York, advises regarding proposed development on New River in West Virginia by West Virginia Power Co., a subsidiary of Appalachian Electric Power Co.; application made by West Virginia Power Co. to Public Service Com'n., Charleston, for an amendment for its original application on Sept. 2, 1924; amended application seeks state license for two developments: 1-Hinton development consisting of dam approximately 43 ft. in height with a utilizable pondage capacity of about 20,500 acre ft. with installed rated capacity of 31,000 h. p. in hydraulic turbines; 2-Bull Falls development consisting of dam approximately 125 ft. in height with a utilizable storage capacity of 165,000 h. p. in hydraulic turbines; Com'n. has not set a date for formal hearing of these 2 developments, but it is expected to be some time in Sept.

Fertilizer Plants

Tex., Dallas—American Fertilizer & Chemical works increasing capital \$25,000 to \$100,000.

Foundry and Machine Plants

Tex., Fort Worth—Oil Fields Engineering Corp. chartered by H. L. Kime, 1556 S. Yorktown St., Tulsa, Okla.; John R. Long, Fort Worth; establish plant for manufacture oil and gas production equipment on Frisco Reservation; work to begin in 2 weeks.

Garages and Filling Stations

Ala., Birmingham—Al Demont Motor Co., capital \$15,000, chartered; A. K. Demont, 1003 19th Court, S.

Ala., Gadsden—C. A. East, Rock Springs, let contract to W. H. Mayben & Sons, Gadsden, at approx. \$35,000 for garage and show room; 1 story, 100x225 ft.; Paul Hefferbert, Archt., Gadsden.

Ala., Montgomery—Adam Cadillac Co., capital \$100,000, chartered; Fred S. Ball, 10 Watson Ave.

Ark., Blytheville—W. I. Denton probably rebuild automobile building recently burned with \$75,000 loss.

Ark., Harrison—Sam B. Cecil erect \$18,000 salesroom and garage; 1 story, brick.

Ark., Howle—Gibson Oil Co., reported, develop tourist camp and erect filling station, garage, etc.

Ark., Jonesboro—Louisiana Refining Co. acquired site and plans filling station, Otwell Road.

Ark., Little Rock—Gulf Refining Co., Frick Annex Bldg., Pittsburgh, Pa., started erecting \$12,000 filling station, Prospect and Palm St., Hillcrest.

Ark., Siloam Spring—Continental Oil Co., Ponca City, Okla., erect \$12,000 filling station; brick, steel and conc.; A. M. Allen, Jr., Archt.

Fla., Jacksonville—Specification Motor Oil System, Greenleaf Crosby Bldg., let contract to Walter J. Bryson Construction Co., W. 14th St., for \$25,000 service station, Jefferson and Adams St.; officers of Florida firm include J. D. Points, Pres., Palatka; J. M. Wolfenden, V-Pres., Southern Vener Co., Palatka, and associates; will establish number of stations in Florida cities.

Fla., Jacksonville—Standard Oil Co., 710 Riverside Ave., reported, erect service station southwest corner Pearl and W. Duval Sts.

Fla., Jacksonville—Goodyear Tire & Rubber Co., Inc., Akron, Ohio, reported, leased N. W. corner Myrtle Ave. and Houston St.; let contract to Ralph E. Spaulding, 1252 Windsor Place, for distributing branch for Florida and South Georgia; 1 story; equipped with sprinkler system, show room and display room; cost \$35,000; George O. Holmes, Jr., Archt., 135 E. Bay St.

Fla., Miami—Francis Whitten, Calumet Bldg., plans filling station, Biscayne Blvd. and Federal Hwy.

Fla., Orlando—Pan-American Petroleum Co., 120 Broadway, New York, acquired site, Orange Ave. and Colonial Drive, for \$12,000 service station.

Fla., St. Petersburg—Standard Oil Co., E. A. Curry, Local Mgr., 930 Third St., S., plans erecting filling station on Ninth St.

Fla., Tampa—Shell Petroleum Corp., Lynch Bldg., Jacksonville, denies report that company acquired Elks Club Bldg., Florida Ave. and Madison St.

Ga., Atlanta—Briarcliff Investment Co., Candler Bldg., let contract to Griffin Construction Co., 452 Spring St., N. W., for garage adjoining 1050 Ponce de Leon Apt., 1050 Ponce de Leon Ave., N. E.; 1 story, 60x80 ft., rein. conc., struc. steel, brick, tar and gravel roof; Frazier & Bodin, Archts., Candler Bldg.

Ga., Macon—Firestone Realty Co., care Louis A. Tharpe, Inc., 308 Second St., opens bids Aug. 15 for \$25,000 service station, Mulberry St.; conc. footings and areaways, brick walls, comp. roof; bidders include: R. H. Smalling & Sons, Fourth Natl. Bank Bldg.; Chess W. Jones, W. A. Stillwell, both Grand Bldg., and M. E. Shaw, 1605 Vineville Ave., all Macon; private plans.

La., Bossier City—Mackey Motor Co., Inc., capital \$20,000, chartered; Geo. R. Mackey, 3552 Youree Drive, Shreveport.

La., New Orleans—Suhren, Inc., 1050 Carondelet St., leased property at 1319 St. Charles Ave. and plans 2-story commercial building.

Md., Hagerstown—Packseal Corp., chartered; Harold F. Brown, Frederick; Wm. R. Seamns, Hagerstown.

Miss., Bay St. Louis—Claude Montoli of Monti Bros., let contract to Peter Boudin, Bay St. Louis, for garage and service station; 53x29 ft.; stucco design; metal roof.

Mo., St. Louis—West Side Buick Auto Co., 484 N. Kingshighway St., capital \$100,000, chartered; F. W. A. Vesper, Fredmar Farms.

N. C., Charlotte—Victor Shaw Tire Co., Victor Shaw, 228 N. College St., started erecting \$50,000 service station, E. Fourth and S. Brevard St.; Lockwood Green Engineers, Inc., Engr., 9 W. Third St.

N. C., Hillsboro—Totten, Inc., capital \$100,000, chartered; W. L. Totten, 2215 Club Blvd., Durham; H. G. Wright, Bessemer St., ext., Greensboro.

N. C., Mebane—Piedmont Chevrolet Co., capital \$50,000; chartered; T. A. Williams, E. H. Morris.

Tenn., Memphis—Rob Rust Motor Co., Inc., R. E. Bell, Mgr., started erecting garage, Watkins St.; 1000 sq. ft. floor space; Joe T. Wallace and Ralph E. Dippell, Archts., both Bank of Commerce Bldg.

Tex., Dimmitt—C. E. Youts erect brick garage.

Tex., Fort Worth—L. C. Maples, 3614 Ave. H, has contract for Cook Melton Motor Co.'s building; Jas. B. Davies, Archt., 1312 Hemp-hill St.

Tex., Houston—Brazos Valley Buick Co., 1320 Milam St., increasing capital, \$100,000 to \$200,000.

Tex., Mercedes—Texas Co., John W. Herndon, Local Agt., erect service station, Missouri Ave. and Second St.; 20x60 ft.

Tex., San Antonio—Tinallium Products Co., Alfred Tinnally, Pres., Builders Exchange Bldg., having plans completed by Kelwood Co., 703 Travis Bldg., for service stations.

Va., Christiansburg—Motor Sales Corp., capital \$25,000 chartered; Liloun Dunlap.

Va., Hopewell—James O. Hefflin has permits for 14 garages, 14th Ave.

Va., Prospect—C. A. Allen constructing filling station.

Va., Prospect—Chick Bros., erect filling station.

Va., Roanoke—Bickford Tire Co., Inc., capital \$25,000, chartered; S. G. Bickford, 1203 Maple Ave., S. W.

W. Va., Elkins—Russell Motor Co., capital \$25,000, chartered; George Ward, U. B. Painter.

Gas and Oil Enterprises

Alabama — Southern Natural Gas Corp., Watts Bldg., Birmingham, reported, let contract to Republic Iron & Steel Corp., Youngstown, Ohio, for 60 mile of 12-in. pipe. 8-7

Ark., Fayetteville—Arkansas Western Gas Co., W. L. Woodward, Dist. Mgr., reported, plans 1-story, 50x100-ft. office building and warehouse. 4-17

Ark., Harrison—Harrison Skel Gas Co. chartered; B. B. McDonald, D. T. Cotton.

D. C., Washington—Kass Realty Co., 1116 Vermont Ave., N. W., erect 1 story gas station, 3619 Georgia Ave., N.; cost \$15,000.

Fla., New Smyrna—Gulf Refining Co., Frick Annex, Pittsburgh, Pa., reported, expend \$50,000 in improvements; C. H. Sams, Local Agt.; plans include steel bulkhead to be built from Hillsboro St. to main channel approx. 500 ft. and another 160 ft. along edge of channel; fill in marsh land lying at foot of Canal St.; erect service station for yachts plying between Jacksonville and Miami, etc.

Fla., Palatka—Shell Petroleum Corp., reported, erect bulk station.

Ky., Louisville—G. M. C. Oil & Gas Co. capital \$20,000, chartered; Finley F. Gibson, Jr., Lincoln Bank Bldg.

Ky., Madisonville—South Western Construction Co., West Bldg., Houston, Tex., has contract for 40 mile pipe line, Madisonville to Russellville, for Missouri-Kansas Pipe Line Co., 820 Dwight Bldg., Kansas City, Mo.; also has contract for distribution gas main system in Madisonville.

Ky., Russell—Inland Gas Corp., Ashland, Ky., reported, granted franchise for pipe line.

La., Crowley—Moody-Seagraves Gas Corp., Inc., Esperson Bldg., Houston, Tex., reported, granted franchise to construct and operate pipe lines.

La., Gueydan—Commercial Oil Co., Inc., capital \$15,000, chartered; E. E. Broussard, L. P. Bonin.

La., Lake Charles—Union Sulphur Co., 33 Rector St., New York, reported, acquired 450 acres at Rose Bluff on Calcasieu River, for tank farm and cracking plant.

La., New Orleans—Chalmert Petroleum Corp., Union Indemnity Bldg., reported, rebuild burned refinery.

La., New Orleans—United Petroleum Corp., chartered; Jas. W. McClain, 63 Neron Place.

La., Opelousas — Moody-Seagraves Corp., Esperson Bldg., Houston, Tex., reported, granted franchise for piping natural gas through city; have natural gas franchises in various cities. 7-10

La., Reserve—Reserve Public Utilities, Inc., J. P. Greven, Pres., distribute natural gas; construct 2 mile of 2-in., 1½ and ¾-in. pipe. See Want Section—Machinery and Supplies.

La., Vinton — Associated Oil Co., Inc., capital \$35,000, chartered; James G. Sutton.

Miss., Canton—City, reported, considering granting natural gas franchise.

Miss., Greenwood—Mississippi Gas & Electric Co., subsidiary Mississippi Power & Light Co., T. M. Salisbury, Jackson, advises regarding natural gas franchise recently granted, will construct high pressure all-welded steel distribution system serving natural gas to domestic, commercial and industrial loads in city; natural gas will be furnished from Monroe-Memphis transmission line through tap line extending from vicinity of Greenville to Greenwood. 8-7

Miss., Hazlehurst—City, reported, postponed granting gas franchise.

Miss., Terry—Mayor and Bd. of Aldermen considering granting 25-yr. natural gas franchise to E. H. Crow, 108 N. Taylor St., St. Louis, Mo.

Miss., Tupelo—Mississippi Natural Gas Co., Watts Bldg., Birmingham, Ala., reported, soon begin work on gas mains in city also pipe line from West Point to Tupelo; lately noted granted franchise. 5-1

Mo., Festus—Missouri Natural Gas Co., St. Louis, applied to State Public Service Comsn., Jefferson City, for certificates of convenience to establish and operate gas distribution system in Jefferson County; recently granted franchise by city council.

Mo., Liberty—Liberty Gas and Service Co., granted 20 yr. franchise; install gas line.

Mo., Valley Park—Meramec Oil Co. chartered; Clyde W. James, Charles H. Beckers.

Oklahoma—Texas-Empire Co., Bartlesville, equipping new stations along trunk line from Lima, Okla., to Chicago, Ill., increasing capacity of pipe line about 50%; equipment includes eighteen No. 8 four stage centrifugal oil line pumps being manufactured by Worthington Pump and Machinery Corp., 2 Park Ave., New York; 6 of the stations are being equipped with electrically driven

centrifugal pumps, 1 with electrically driven reciprocating pumps and 1 with reciprocating pumps driven by Diesel engines. 4-10

Oklahoma — Truman-Smith Construction Corp., reported, has contract for 4-in. pipe line for Vickers Petroleum Co., Wichita, Kan., from Keys lease in Eastborough township field of Wichita, Kans., to connect with Empire pipe line.

Okla., Oklahoma City—Oklahoma Gas & Electric Co., erecting service station 20 W. Noble St.; brick, struc. steel frame; work under direction of Howard Teague, Field Supt.

S. C., Charleston—South Carolina Public Service Co., subsidiary of Central Public Service Co., Chicago, Ill., plans expending \$200,000 in improvements to gas service; install additional equipment.

S. C., Chester—Southern Public Utilities Co., 426 S. Church St., Charlotte, N. C., reported, applied for gas franchise; construct \$100,000 plant.

Tennessee—F. H. Evans, commercial agent of Utilities Gas & Electric Co., 22 W. Monroe St., Chicago, reported, will erect through Tennessee Gas Co., 22 W. Monroe St., Chicago, Ill., 40 plants for distribution of Butene gas throughout State; have secured franchises at Lenoir City, Harriman and Shelbyville; will soon begin construction of plant at Lenoir City.

Tenn., Memphis—Standard Oil Co. of Louisiana, Baton Rouge, reported, plans improvements to oil distributing facilities here.

Texas—Texas Gas Utilities Co., subsidiary of Appalachian Gas Corp., Union Trust Bldg., Charleston, W. Va., plans under way for construction of additional main natural gas pipelines, as announced by Ross Holmes, Ch. Engr. of company; first construction will be that of Crystal City to connect with main pipe line linking Uvalde fields with city of Uvalde; second section of work will carry line through Winter Garden district of Texas, connecting number of cities and towns, including Carrizo Springs, Asherton and Caterina; future development calls for linking of Chittim Field and Uvalde Field. 5-22

Tex., Bastrop—Moody-Seagraves Corp., Esperson Bldg., Houston, reported, applied for gas franchise.

Tex., Fort Worth—Sinclair Oil Co., Fifth and Main St., reported, plans rebuilding Pierce Co.'s refinery, lately acquired.

Tex., Taylor—T. L. Rousey, Big Springs, constructing \$200,000 refinery on Tom Kanak farm, south of city. 8-7

Va., Alexandria—City Council opens bids Sept. 11 for sale of city gas developing and storage plant and distribution system and franchise for operation.

W. Va., Clarksburg—Harrison-Ritchie Oil & Gas Co., capital \$50,000, chartered; S. A. Smith, 349 Washington Ave.

West Virginia—H. E. Danner, V. P. and Mgr., Appalachian Gas Corp., 46 Cedar St., New York, and Charleston, W. Va., announced plans for further developments of West Virginia Gas Corp., control of which was recently acquired; improvements include laying pipe line, drilling new wells and inter-linking with pipe lines of other companies in the Appalachian Gas Corp., group located in West Virginia natural gas fields; work will commence immediately on pipe line to conduct gas from Monickel field in Lincoln County; line will connect pipe line of Monickel Gas Co., subsidiary of West Virginia Gas Corp., extending from Cabell County field to Huntington, with Buffalo Creek field pipe line of Allegheny Gas Corp.; completion of line by Sept. 8-2

Ice and Cold-Storage Plants

Ga., Eastman—Fred R. Bennett erect \$35,000 cold-storage plant; brick, comp. roof.

Miss., Columbia—General Refrigeration Co., 630 Baronne St., New Orleans, La., has contract at \$35,000 for erecting ice plant at State Industrial School.

Land Development

Ark., Furth—Acme Land Co., chartered; E. P. Ladd, Sr.

Fla., Miami Beach—Sunbar Corp. chartered; W. J. Dunn, 830 Lincoln Road.

Fla., Miami — Royal Citrus Groves Co., Charles R. Pierce, Pres., Seibold Bldg., acquired 50,000 acres; at present time have not made plans for development; ultimately will develop for subdivision.

La., Baton Rouge—Bodave, Inc., chartered; C. J. Bogan, 253 Main St.

La., New Orleans—Hancock Land Co., capital \$25,000, incorporated; I. M. Crawford Citizens Bank Bldg.

La., Shreveport—Simand Corp., chartered; W. B. Simmons, 629 Ratcliff St.

Md., Baltimore—F. T. Scarborough Co., 3100 Abell Ave., chartered; Frank T. Scarborough, 3109 Abell Ave.

Miss., Biloxi — City, John J. Kennedy, Mayor, negotiating to acquire eastern half of Ship Island for park and playground.

Mo., Bernie—H. J. Cotton Co., capital \$20,000, chartered; N. C. Jeffress, Bernie; Arthur E. Harmes, Columbia, Ill.

Mo., Kansas City—City, H. F. McElroy, City Mgr., reported, plans improvement to Swope Park.

Mo., Kennett—D-P Land Co., capital \$50,000, chartered; Charles A. Hankins, N. F. Morris.

Mo., St. Louis—Nahn-Heberer Realty Co. chartered; James Nahn, 4846 Millentz St.

N. C., High Point—John C. Abels, Chmn., City Park and Playground Comsn., construct 9 hole golf course southern section of city; erect clubhouse, swimming pool, etc.

Tenn., Maryville — American Amerine Corp., Robert K. Tomlinson, Pittsburgh, Pa., and Indianapolis, Ind., reported, plans tourist development in Chilhowee Mountains; surveys under way for golf course under direction of Wm. H. Diddel, Indianapolis, Ind.; build swimming pool, 140 room hotel, etc.

Tex., Hockley—J. M. Andrews, Houston, reported, acquired 1600 acres in Waller and Harris County.

Va., Martinsville—E. S. Draper, Landscape Archt., Charlotte, N. C., retained as Conslt. Golf Archt. on new 9-hole golf course.

Va., Petersburg—J. W. Ferrell Co., Inc., chartered; J. W. Ferrell, 1522 Westover Ave.

Va., Richmond—Home Land Improvement Co., Inc., capital \$60,000, chartered; A. Koch, 3334 Parkwood Drive.

W. Va., Shinnston—Robert M. Boone Co. chartered; Robert M. Boone, Charles M. Randall.

Lumber Enterprises

Ky., Louisville—Maas-Platter Lumber Co., Inc., changing name to Weaver-Haas Lumber Co.

N. C., Henderson—Avon Lumber Co., Inc., capital \$125,000, chartered; O. W. Thomason, L. B. Prince.

Okla., Oklahoma City—State Service Corp., capital \$25,000, chartered; O. B. Avent, 1710 W. 19th St.

Tex., Jefferson—Ware & Driskell Lumber Co. rebuilding planing mill recently burned.

Va., Charlottesville—Yancey Bark & Lumber Co., capital \$40,000, incorporated; P. S. Yancey, Culpeper.

Va., Newport News—Weaver Bros., Inc., capital \$150,000, chartered; C. K. Weaver, 3101 West Ave.

Metal-Working Plants

Fla., Jacksonville—Continental Can Co., 1 Pershing Square, New York, has permit for \$10,000 alterations to plant, Spires and 15th Sts.; O. P. Woodcock Co., Gen. Contr., Duval Bldg. 5-29

Mining

N. C., Bryson City—H. M. Thompson, 238 W. 129th St., New York, reported, acquired Fontana copper mine, under lease to Fontana Mining Co., subsidiary of Ducktown Chemical & Iron Co., Isabella, Tenn.; mine is located on Eagle Creek on Swain County, 30 miles from Bryson City; comprises 2800 acres; plan development; also has option on 840 additional acres adjacent.

Miscellaneous Construction

Ala., Mobile—Virginia Bridge & Iron Co., Roanoke, Va., has contract for 725 tons steel for transit shed along south side of Pier C of Alabama State Docks Comsn.; O. M. Gwin Construction Co., Gen. Contr., 3503 Fern St., New Orleans, La. 7-24

Fla., Daytona Beach — City, Clarence M. Rogers, City Engr., let contract in few days for 600-ft. extension to city docks along south side of Burgoyne Island.

Ga., Savannah—U. S. Engr. Office opens bids Aug. 29 for constructing shore protection work, eastern shore Ft. Screven reservation, Tybee Island. See Want Section—Bids Asked.

Louisiana—Bd. of State Engrs., New Orleans Court Bldg., New Orleans, opens bids Aug. 19 for following: Bank protection—Hervy Canal Bend, Red River, right bank, Caddo Parish, 51½ mi. by river above Shreveport, either 7 current retards, aggregate length of 1050 lin. ft., or 7 permeable crib deflection spurs, having aggregate length of 1050 lin. ft.; repairs to existing structures, Red River, left bank, Bossier Parish, Cat Island Bend Project, 17 mi. above Shreveport, consisting of new mattress, arrest sloughing bank, repair mattress, renewing screen poles and sheathing boards, 300 lin. ft. new permeable 3-row timber structure, straightening and bracing dike; new levees—Thompson, Red River, right bank, Caddo Parish, 6100 ft. long, 224,000 cu. yd.; Wild Lucia-Crescent, Red River, Right Bank, Caddo Parish, 3176 ft. long, 61,300 cu. yd.; Uni, Red River, right bank, Caddo Parish, 1690 ft. long, 30,200 cu. yd.; Robson, Red River, right bank, ft. long, 15,300 cu. yd.; Chalk Level, Red River, left bank, Bossier Parish, 2800 ft. long, 51,500 cu. yd.; Lacey Bayou, Red River, 3080 ft. long, 64,000 cu. yd.; Hollingsworth, 800 cu. yd.; Van Hoose, Red River, left bank, Bossier Parish, 1175 ft. long, 14-bank, Bossier Parish, 1494 ft. long, 11,600 cu. yd.

Louisiana—Bd. of State Engrs., New Orleans Court Bldg., New Orleans, opens bids Aug. 19 for Dixie Gardens Levee, Red River, right bank, Caddo Parish, 2000 ft. long, 23,000 cu. ft.

Louisiana—Dell Brown, Constr. Supt., U. S. Bureau of Fisheries, Washington, D. C., considering sites for \$50,000 fish cultural station.

Md., Ocean City—State Roads Comsn., Dept. of Public Works, Baltimore, opens bids Aug. 19 for timber jetties, one to be built at approx. North Second St. and one approx. at N. Fourth St.

Miss., Biloxi—Harrison County Bd. of Suprvs., Gulfport, opens bids Sept. 2 for step-type and concave type road protection or sea wall; Paul Bonham, Engr., Gulfport.

Missouri—U. S. Engr. Office, McCall Bldg., Memphis, Tenn., opens bids Sept. 3 for constructing 850 lin. ft. permeable crib dikes, Mississippi River, Baders Front, 121 mi. below Cairo, Ill.

N. C., Kitty Hawk—War Dept., Quartermaster General, U. S. Army, Washington, reported, will let contract about Sept. 15 for \$238,000 Wright Memorial; Robert P. Rogers and Alfred E. Poor, Archts., 130 W. 42nd St., New York.

Tex., Beaumont—Port Comsn., J. Russell Wait, Port Director, begin repair and enlargement program involving construction; 3 new warehouses and revamping another; \$75,000; plans drawn.

Tex., Port Arthur—City Comsn. has low bid from Martin Bros., Orange, at \$22,950 for constructing dirt portion of sea wall; J. B. Converse Engineering Co., Inc., Engr., Industrial Bank Bldg.

Va., Newport News—Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond, drawing preliminary designs for \$1,500,000 merchandise pier; to be some time before asking for bids.

Miscellaneous Enterprises

Ala., Anniston—Alabama Coca Cola Bottling Co. opens bids Aug. 20 for \$75,000 bottling plant; 2 story and basement, garage building, 130x71 ft.; rein. conc., brick and tile walls; contractors estimating include: Barge-Thompson Co., 136 Ellis St., N. E., and Southern Ferro Concrete Co., Atlanta Trust Bldg., both Atlanta, Ga.; Ogletree Construction Co., 11th St., and Duke, Stickney Const. Co., Liles Bldg., both Anniston; Day & Sachs, 2400 Fifth Ave., S., and Foster & Creighton, Protective Life Bldg., both Birmingham; Pringle & Smith, Archts., Norris Bldg., Atlanta, Ga.

Ark., Fayetteville—Neil Dearing, El Dorado, leased Aumick Bldg., S. East St.; install Dr. Pepper bottling plant; plans erecting plant later.

Ark., Newport—Coca-Cola Bottling Co., C. W. Hayes, Mgr., has plans in progress for \$20,000 plant, Beach St.; 1 story, brick, conc., plate glass front; Thompson, Sanders & Ginocchio, Archts., Hall Bldg., Little Rock.

Ark., Pine Bluff—Earle Cabell acquired properties here of Southwest Dairy Products Co., Santa Fe Bldg., Dallas, Tex.; to be operated as Cabells Dairy Products Co.

Ark.-Tex., Texarkana—Graham Burnham, Foreman Bldg., establish electric blue printing plant for printing ownership maps which will give fractions, lease changes, royalty holdings, etc.

Fla., Jacksonville—Duval Creamery, chartered; Joseph F. Harper, 224 W. Sixth St.

Fla., Miami—Merrill-Stevens Dry Dock Co., 1270 N. W. 11th St., plans \$75,000 construction program.

Fla., Panama City—Ingalls Iron Works Co., Birmingham, Ala., has contract for 300 tons steel for power house at paper mill of Southern Kraft Corp., 466 Michigan Ave., Mobile, Ala., subsidiary of International Paper Co., 100 E. 42nd St., New York; owner builds.

Fla., Pensacola—Superior Baking Co., Candler Bldg., Atlanta, Ga., reported, acquired Hughes' Bakery.

Fla., Tampa—Cuesta Rey Cigar Co., A. L. Cuesta, Jr., Pres., 2446 Howard St., plans addition to plant on Howard Ave., West Tampa, connecting present buildings; brick; 3 story; F. J. Kennard & Son, Archts., 303 Zack St., Tampa.

Ga., Atlanta—Daylight Laundry, Inc., 267 Marietta St., N. W., reported, erect laundry on Jackson St. near Boulevard; cost \$25,000; 1 story and basement, conc. footings; brick walls, compo. roofing.

Ga., Atlanta—The Flagler Co., Red Rock Bldg., Atlanta, reported, has contract for building in rear of 216 Elliott St. for Atlanta Metallic Casket Co.; 2 story and basement; cost \$10,000.

Ky., Cynthiana—A. C. Draheim, Fond du Lac, Wisc., plans establishing milk condenser, cheese and butter plant within 30 days.

Ky., Paintsville—Star Cleaners, capital \$10,000, chartered; R. C. Thomas.

Ky., Somerset—J. E. Sears and associates start erecting stock yards at once, to be completed by Sept. 1.

Ky., Somerset—Pulaski Stock Yards Co., O. L. Wilson, Pres., opens bids Sept. 1 for plant; R. J. Smith Co., Equipment Contrs.

La., Shreveport—Nelson Candy Co., Inc., chartered; J. H. Nelson, 3015 Samford Ave.

Md., Baltimore—Plans for dairy farm building and improvements for Donald Symington, Indian Spring Farms, Harford County, Maryland, are being prepared by W. S. Austin, Consig. Engr., 800 Maryland Trust Bldg.

Md., Baltimore—Manhattan Laundry Corp., 1109 Calvert Bldg., chartered; J. Craig McLanahan, Calvert Bldg.

Mo., Joplin—Eagle-Picher Lead Co., Smelter Hill, and 134 N. La Salle St., Chicago, Ill., completing plans for \$30,000 plant to produce mineral wool; 2 story, brick, conc.

Mo., Kansas City—Borden Co., 350 Madison Ave., New York, acquired Home Dairy Co., 3105 Gillham St., and property adjoining.

Mo., Kansas City—Southwest Wire & Iron Works, 1720 Tracy Ave., reported, rebuild burned portion of plant.

Mo., Perryville—Keifner & Gelle Construction Co., capital \$25,000, chartered; Chas. E. Keifner, John F. Gelle.

Mo., St. Louis—Lutz Fireproof Heating Co., capital \$37,000, chartered; George J. Lutz, 3970 Dover St.

Mo., St. Louis—Account Builders, Inc., capital \$50,000, chartered; P. T. Mephram, St. Louis; W. H. Wilkes, New York; advertising and printing.

Mo., St. Louis—Ebenreck Plumbing Co., Inc., chartered; Edwin F. Ebenreck, 1516 S. Grand St.

N. C., Charlotte—Charlotte Packing & Refining Co., capital \$25,000, chartered; George W. Parr, Lancaster; Edward Wolf, Charlotte; slaughter house.

Tenn., Chattanooga—London Sand & Gravel Co., S. P. Dannel, Pres., Loudon, plans moving plant here and expanding facilities; \$50,000 capital to be increased.

Tenn., Knoxville—W. R. Martin acquired Tripure Water Co., 1158 Atlantic Ave.; may expand facilities.

Tenn., Memphis—Old Trails Auto Insurance Co. and Oak Auto Insurance Association, both Indianapolis, Ind., merging with National Automobile & Casualty Insurance Co., 1070 Union Ave., Memphis.

Tenn., New Market—H. B. Chapman, owner of Shenandoah Caverns, Ky., reported, acquired Indian Cave; will develop; install electric lights; improve road, etc.

Tex., Beaumont—Socony Specialties, Inc., subsidiary of Standard Oil Co., 26 Broadway, New York, started erecting paint plant; main building 75x75 ft., 3 story.

Tex., Dallas—Cream Separator Bottle Co., chartered; R. G. Storey, Republic Bank Bldg.; manufacture patented milk bottles.

Tex., Dallas—Icy Fruit Co. of Texas chartered; George L. Boedecker, 1201 Savoy St.

Tex., Fort Worth—Wisconsin National Fibre Can Co., plans erecting plant for manufacture of paper cans and containers; capacity 5000 containers per hr.; all of products are manufactured by automatic machines and machinery for Fort Worth plant is now being built at Cudahy, Wis.; plans call for organizing separate Texas company to be capitalized at \$250,000.

Tex., Fort Worth—Fort Worth Products, Inc., erect 1 story, chile plant, Stella St. and Arizona Ave.; cost \$11,000.

Tex., Fort Worth—Walker Pure Food Products Co., C. C. Cooper, Cotton Exchange Bldg., reported, let contract to Walter Whitely, 3009 Knox St., Dallas, for plant; Ed Larsen, 1623 Grand St., for brick; Worthorete Tile Co., 917 N. Main St., for tile; Lydick Roofing Co., 100 Missouri St., for roof; Southern Ornamental Iron Works, Boazard and E. Front St., for steel; all Fort Worth.

Tex., Harlingen—Valley Baking Co. let contract to Fogel Construction Co., Reliance Bldg., Kansas City, Mo., for \$125,000 bakery; 1 story, 120x212 ft., brick, tile, terra cotta.

Tex., Houston—George H. Dentler, 1809 Summer St., manufacturer of prepared foods and potato chips, let contract to A. L. Etie, 204 Hamilton St., for \$35,000 plant and warehouse, McGowan and Hutchins St.; 125 x167 ft., rein. conc., brick, steel, hollow tile; J. E. Hebert, Archt., 2505 Travis St.

W. Va., Charleston—American Fork & Hoe Co. formed by merger of Kelly Axe & Tool Co., Inc., West Charleston, American Fork & Hoe Co., Keith Bldg., Cleveland, Ohio, and Skelton Shovel Co., Dunkirk, N. Y.

Motor Bus Lines and Terminals

Alabama—C. F. Sterritt applied to Alabama Public Service Comsn., Montgomery, for permission to operate bus line, Birmingham to Montevallo via Bessemer, Aldrich, Dogwood, Maylene, etc.; W. E. Rylee applied for permission to operate bus line between Marion and Birmingham; Rewold-Ready Transportation Co., for permission to operate between Montgomery and Uniontown; L. J. Campbell for interstate service across Alabama-Georgia state line en route to Chattanooga, Tenn., from Birmingham; E. S. Hawley applied for permission to extend Dothan-Opp line to include Andalusis; Motor Terminal and Transportation Co., 420 Lee St., Montgomery, to operate between Montgomery and Dothan via Troy, Ozark and Pinckard; hearing Aug. 18.

Fla., Jacksonville—Georgia-Florida Motor Lines, Inc., Nieuport Estes, Pres., 000 Hogan St., reported, acquired Motor Transportation Co. of The South, subsidiary of Seaboard Air Line Ry.; operates passenger bus line between Jacksonville and Tallahassee.

Fla., Panama City—St. Andrews Bay Transportation Co., capital \$50,000, chartered; H. P. Edwards, Pres.; establish motor bus line between Panama City, Fla., Mariana, Fla., and Dothan, Ala., with terminals at Panama City and Dothan.

La., Jeanerette—Teeche Transfer Co., E. S. Jeffrey, Secy., changed name to Teeche Lines, Inc.

La., Opelousas—Gulf Freight Lines, Inc., capital \$125,000, chartered; J. P. Barnett, Geo. Bienville.

Md., Baltimore—Safety Transit Co., 1109 Calvert Bldg., chartered; J. Craig McLanahan, Calvert Bldg.

Miss., Greenwood—E. E. Hurley and Clay Lawton, operating as Valley Bus Lines, applied to Mississippi Railroad Comsn., Jackson, for permission to operate bus line from Greenwood to Greenville.

Texas—South Texas Coaches, Henry Burt, Division Mgr., Cuero, reported, acquired Greyhound lines operating from Victoria to San Antonio and Simms line from Cuero to Kennedy.

Tex., Houston—Southwest Freight Co., Marine Bank Bldg., T. R. Rogers, Gen. Mgr., operate rail and water service between Houston, the Atlantic seaboard and central states.

Tex., Port Arthur—A. L. Burge, of Coastal Coaches, Inc., reported, applied to State Railroad Comsn., Galveston, for permission to operate bus line from Port Arthur to Beaumont.

Va., Norfolk—Pennsylvania Ferry Co., Charles W. Harrison, Pres., 501 Fifth Ave., New York, expended \$128,000 with White Co., 7821 St. Clair Ave., Cleveland, Ohio, for buses and truck in connection with proposed bus service between Norfolk and New York; applied to Circuit Court for permission to operate in Norfolk. 7-17

West Virginia—Pennsylvania General Transit Co., Pittsburgh, Pa., reported, granted permission by State Road Comsn., Charleston, to operate inter-state bus lines between Ohio state line at Fort Steuben bridge and Pennsylvania state line near Paris.

West Virginia—Ken Gosselin, Liss, Ky., granted authority to operate bus line in DeLorme, Mingo County, for interstate use.

Railways

Tex., Cleveland—Trinity Valley & Northern Ry. Co., J. M. West, Pres., West Bldg., Houston, applied to Interstate Commerce Comsn., Washington, D. C., for permission to construct line, Cleveland to Havens, 12 mi.

Tex., Houston—Missouri-Kansas-Texas R. Co. of Texas, J. A. Johnson, Signal Engr., Denison, ordered from Union Switch & Signal Co., Swissvale, Pa., material for installing automatic block signals on line between Eureka and Houston; color-light.

Tex., Paris—Percy Jones, Abilene, acquired properties of Paris & Mount Pleasant R. R. Co., R. W. Wortham, Receiver, Paris.

Va., Richmond—Chesapeake & Ohio Ry. Co., H. C. Pearce, Director of Purchases and Stores, Cleveland, Ohio, reported, ordered 58,000 tons rails as follows: 25,000 tons, Illinois Steel Co.; 19,300 tons, In and Steel Co., both Chicago, Ill.; 8800 tons, Bethlehem Steel Co., Bethlehem, Pa.; 5500 tons, Carnegie Steel Co., Pittsburgh, Pa.

Railway Shops and Terminals

Okla., Boise City—Atchison, Topeka & Santa Fe Ry. Co., W. W. Kelly, Ch. Engr., Western Lines, Amarillo, Tex., acquired site for roundhouse, shops and side tracks.

Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

Alabama—State Highway Comsn., Montgomery, receives bids at once to complete Mobile-Calvert road; R. D. Jourdan, State Highway Engr.

Ala., Athens—State Highway Comsn., Montgomery, plans letting contract within next 6 weeks for 8 mi. paving Bee Highway in Limestone County, and 3.6 mi. in Morgan County.

Ala., Birmingham—City Comsn. authorized expending about \$15,500 for paving Fourth Way and 12th Ave.; A. J. Hawkins, City Engr.

Ala., Birmingham—State Highway Comsn., Montgomery, opens bids Sept. 9 for grading, draining 28 mi. Bankhead highway, Jefferson County; Between Birmingham and St. Clair County line; between Adamsville and Walker County line; cost over \$600,000. 8-7

Ala., Hamilton—State Highway Comsn., Montgomery, receives bids Aug. 26 for 14.63 mi. grading, draining, surfacing Marion County, 45,241 cu. yd. excavation, 65,43 lb. rein. steel; bridges: 371,000 lb. rein. steel, 146,400 lb. struct. steel; R. D. Jourdan, State Highway Engr.

Ala., Mobile—City Comsn. widening Dauphin St.; Wright Smith, City Engr.

Ala., Mobile—State Highway Dept., Montgomery, opens bids Sept. 9 for 13 mi. cement conc. paving, John Craft Highway, Mobile County, est. cost \$240,000; R. D. Jourdan, State Highway Engr.

Ark., Newport—City receives bids soon for grading, curbing, gutters, sewers and 15,500 sq. yd. 7-in. rein. conc. paving, Third St., Street Improvement Dist. No. 14; Lund Engineering Co., Home Insurance Bldg., Little Rock.

Ark., Pine Bluff—State Highway Comsn., Little Rock, plans to start work in next 30 days on hard surfacing 3 mi. State Highway No. 3, Pine Bluff to Watson Chapel; C. S. Christian, State Highway Engr.

Ark., Prescott—City receives bids about Sept. 1 for 10 blocks grading, curbing and rein. conc. paving, Street Improvement Dist. No. 3; Lund Engineering Co., Home Insurance Bldg., Little Rock.

D. C., Washington—Office of Quartermaster Supply Officer, General Depot, opens bids Aug. 19 for 2800 ft. roadway, 30 ft. wide, 6-in. conc. base, 2½ bit. wearing surface with curbs, Arlington National Cemetery.

Fla., Orlando—C. C. Belt, 5 Watkins Block, and H. P. Eastwood, Water Witch, granted franchise by Orange County Comms. to construct 100-ft. right-of-way toll road from Orlando to Cape Canaveral on East Coast; awaiting franchise from Brevard County Comms.

Georgia—State Highway Comsn., Atlanta, plans paving portion of Route 3 between Atlanta and Albany; B. P. McWhorter, State Highway Engr.

Ga., Brunswick—City and Glynn County Comms. plan paving Glynn Ave. and Gloucester St. connecting with Coastal Hwy.

Ga., Columbus—Muscooke County opens bids Aug. 18 for conc. paving streets in Peachwood Woods and Rock Park sections and Forest Court.

Ga., Eatonton—State Highway Bd., Atlanta, will let contract soon for conc. paving Macon-Madison road.

Ky., Paris—Bourbon County Fiscal Court considering expending \$100,000 for highways. See Financial News Columns.

Louisiana—Louisiana Highway Comsn., E. M. Scarborough, Maintenance Supvr., Lake Charles, plans connecting Pelican Highway, State Route No. 165, with Old Spanish Trail, U. S. Route No. 90, at Iowa instead of Iowa Junction.

La., Baton Rouge—City, Comsn. Council receives bids Aug. 19 for paving Boyd Ave. and N. Menard St. with Warrenite bitulthic or Portland cement conc., grading, draining, curb and gutter; L. J. Voorhies, Consit. Engr.

La., Jonesboro—Louisiana Highway Comsn., Baton Rouge, receives bids Aug. 26 for 5 mi. grading, draining, highway, Jackson Parish.

La., Ville Platte—City, G. L. Fontenot, Mayor, opens bids Aug. 26 for 5600 sq. yd. Portland cement conc. paving, 6000 ft. gutter bottom and grading; M. L. Goudeau, Jr., Engr., Opelousas.

Maryland—State Roads Comn., Baltimore, receives bids Aug. 19 for 2 roads: Harford County—1.23 mi. conc., Bush's Corner-Pennsylvania State Line road, Cont. H-98-41; Queen Anne's County—.65 mi. penetration macad., from Eastern Shore Blvd. to Queens-town, Cont. Q-60-24; L. H. Stewart, Sec.

Maryland—State Roads Comsn., Baltimore, received low bids for 10 roads: Anne Arundel County—1.45 mi. hot or cold bit. mixtures, Camp Meade road, P. Flanagan & Sons, Inc., Harford Rd. and B. & O. R. R., Baltimore, \$13,502; Baltimore County—3.80 mi. conc. shoulders, Falls road, Harry T. Campbell Sons Co., Towson, \$46,241; 3.97 mi. conc. shoulders, North Point road, G. & L. Contracting Co., 3509 Northern Parkway, Baltimore; Cecil County—3.63 mi. conc. shoulders, Rising Sun-Fair Hill road, G. & L. Contracting Co., \$22,256; Dorchester County—1.87 mi. conc., Blackwater-Church Creek road, P. D. Phillips & Bros., Salisbury, \$38,296; Frederick County—1.09 mi. conc., Rocky Ridge-Detour road, T. R. Waeche & Sons, Thurmont, \$34,792; Harford County—1.05 mi. penetration macad., resurfacing, from Baker's Corner toward Worthington's Corner, Harry T. Campbell Sons Co., \$17,602; Howard County—1.39 mi. conc., relocation Baltimore-Washington Blvd., northwest of Elkridge, Harry T. Campbell Sons Co., \$29,538; 2.08 mi. hot or cold bit. mixture resurfacing, Clarksville Pike, Thomas, Bennett & Hunter, Westminster, \$19,630; Washington County—1.04 mi. penetration macad., resurfacing, Sharpsburg to Burnside bridge, Bester Long Co., 441 S. Potomac St., Hagerstown, \$18,862; L. E. Stewart, Secy. 7-31

Md., Baltimore—City, Bd. of Awards, received low bid from Baltimore Asphalt Block & Tile Co., 1320 N. Monroe St., at \$74,580, for street improvement in Contract 559; from Aiello Construction Co., Gough and Dean Sts., \$25,528, for Contract No. 558; Nathan L. Smith, Highways Engr.

Md., Baltimore—City, Bd. of Awards, receives bids Aug. 13 to grade, curb and pave

with cement conc. streets in Contract No. 550; 10,650 sq. yd. conc.; Nathan L. Smith, Highways Engr.

Md., Fort George G. Meade—Contracting Quartermaster opens bids Sept. 3 for building and completing main roads, service roads, main and house sidewalks in officers' and non-commissioned officers' area.

Miss., Starkville—Oktibbeha County Bd. of Supvrs. considering expending \$20,000 for roads. See Financial News Columns.

Missouri—State Highway Dept., Jefferson City, has low bids for 32 roads: Ralls County—2.6 mi. 18-ft. gravel, R. G. Aldridge, Kansas City, Kans., \$27,702; Barton County—.4 mi. 20-ft. conc., Independent Construction Co., Pittsburg, Kans., \$42,884; Bollinger County—1.1 mi. 18-ft. gravel, R. H. Potashnick, Cape Girardeau; Callaway County—16 mi. crushed stone, 10.4 mi. gravel, E. C. Johnson Construction Co., \$53,230; Carroll County—4 mi. 12 ft. chas., Q. W. Fuller, Nevada, Mo., \$33,357; Cedar County—3.6 mi. 16-ft. gravel, R. H. Sharp, Reed Springs, \$17,682; Clark County—5.6 mi. 18-ft. gravel, McClone & Walesby, Independence, \$87,671; Morgan County—4.39 mi. 16 ft. gravel, John Spitecaufsky, 2452 Benton Blvd., Kansas City Mo., \$29,458; Douglas County—7.2 mi. graded earth, Carte-Harlin Construction Co., West Plains, \$21,030.

In Howell County—7.7 mi. 24-ft. graded earth, Carte-Harlin Construction Co., \$23,302; Grundy County—2.9 mi. 16-ft. crushed stone, Knutson Bros., 3520 Main St., Kansas City, \$10,350; Jackson County—0.4 mi. pavement widening, J. A. Tobin Construction Co., 226 W. 39th St., Kansas City, \$8,804; 4.5 mi. 20-ft. conc., List & Weatherly Construction Co., Rwy. Exch. Bldg., Kansas City; Cass County—6.1 mi. 20-ft. conc., List & Weatherly Construction Co., \$80,336; Knox County—12.3 mi. 30-ft. graded earth, Cameron Joyce & Co., Keokuk, Ia., \$100,097; Lincoln County—3.3 mi. 20-ft. conc., Koss Construction Co., Des Moines, Ia., \$4,456; Mercer County—13 mi. 18-ft. gravel, Martin Wunderlich, St. Paul, Minn., \$21,796; Putnam County—3.2 mi. 18-ft. gravel, Martin Wunderlich, In Rolla County—7.3 mi. 20-ft. conc., Clark, Yearney & Stark, Louisiana, Mo., \$267,197; Marion County—3.2 mi. 20-ft. conc., Clark, Yearney & Stark, \$148,315; Randolph County—7.8 mi. 18-ft. gravel, Frank Platt, Quincy, Ill., \$7033; Saline County—5.8 mi. 24-ft. graded earth, \$21,235 and 13.3 mi. 18-ft. gravel, \$16,073, both Chas. Spitecaufsky; St. Clair County—4.2 mi. 16-ft. gravel, W. L. Knoll, Gainesville, \$29,575; Ste. Genevieve County—3.8 mi. 16-ft. gravel, Kelfner & Geffe, \$21,664; St. Louis County—1.6 mi. 20-ft. asphalt conc. and 22-ft. conc., Central Paving & Construction Co., 411 N. Seventh St., St. Louis, \$37,318; Stoddard County—4 mi. 24-ft. graded earth, Norman Davis, Sikeston, Mo., \$22,558; Texas County—8.6 mi. 24-ft. graded earth, \$20,979, and 7.2 mi. 16-ft. gravel, \$8,179, both A. A. Davis & Co., Cotton - Grain Exch. Bldg., Oklahoma City; Wayne County—9.6 mi. 18-ft. gravel, A. A. Davis & Co., \$13,557; Worth County—1.8 mi. 30-ft. graded earth, 1.6 mi. 14-ft. crushed stone, Knutson Bros., \$42,707. 7-24

Missouri—State Highway Comsn., Jefferson City, receives bids Aug. 22 for 32 roads and 26 bridges: Andrew County—3,151 mi. 24 ft. graded earth, Route 71-Fillmore, 20,505 cu. yd. excavation, bridge over branch; Holt County—2,557 mi. 24-ft. graded earth, Route 1-New Point, 12,708 cu. yd. excavation; Caldwell County—3,896 mi. 14-ft. crushed stone, Route 36-Kidder, 5717 cu. yd. excavation; Daviess County—3,896 mi. 14-ft. crushed stone, Kidder-Altamont road, 20,409 cu. yd. excavation; 2,248, 2,983, 2,854, 3,392 cu. yd. graded earth, Pattonburg-Route 6, 250,515 cu. yd. excavation, bridges over Grand River overflow, over South Big Creek and over C. R. L. & P. R. R. deck girders and I-beams; Nodaway County—4,518 mi. 24-ft. graded earth, Maitland-Route 71, 25,143 cu. yd. excavation, bridge over White Cloud Creek, I-beams, 54,230 lb. struc. steel; Linn County—3,750 mi. 16-ft. gravel, Purdin east, 32,418 cu. yd. excavation, I-beam bridge over Long Branch.

In Lincoln County—1,391 mi. 18-ft. gravel, Troy-Winfield; Clay County—deck girder bridge over C. C. R. I. & P. R. R., near Lawson; Pettis County—4,299 mi. 12-ft. gravel, Lamont-Green Ridge, 19,026 cu. yd. excavation, I-beam bridges over Muddy Creek, 4062 cu. yd. paving, 117,820 lb. struc. steel; Platte County—4,115 mi. 18-ft. gravel, Weston Route 92, 96,160 cu. yd. excavation, 5288 cu. yd. paving; Osage County—0,521 mi. 20-ft. conc., Route 63-east, 6262 sq. yd. paving; 4,325, 3,927, 4,754, 2,679 mi. 20-ft. conc.; Cole County—Freeburg, 39,994 cu. yd. excavation, 186,537 sq. yd. paving; Crawford County—2,452 mi. 16-ft. gravel, Steelville-Cherryville, 9795 cu. yd. excavation, bridge over Black Jack Creek; Ste. Genevieve County—2,705, 2,835 mi. 18-ft. gravel, Ste. Gene-

vieve-St. Mary's, 124,174 cu. yd. excavation, 6872 cu. yd. paving, bridges over M. & I. R. R., South Gaborul, Valley Spring and Dodge Creeks, deck girders.

In St. Louis County—0.227 mi. 60-ft. conc., Big Bend Road-Frisco R. R., 10,721 cu. yd. excavation, widening I-beam bridge, 30,400 lb. struc. steel; McDonald County—2,008 mi. 18-ft. gravel, Pineville-Arkansas State Line, 61,889 cu. yd. excavation, deck girder bridges over Spring Branch and Gordon Hollow Branch, 84,990 lb. struc. steel; Christian County—bridge over Finley Creek at Ozark; Phelps County—1,850 mi. 18-ft. gravel, Newburg Spur, 20,924 cu. yd. excavation, bridges over branches; Dunklin County—1,843 mi. 16-ft. gravel, McGuire-Ref. No. 7, 5624 cu. yd. excavation; 0.316 mi. 18-ft. conc., Senath, 2,655, 2,481 mi. 12-ft. gravel, Parma-Risco, 4045 sq. yd. paving; New Madrid County—28,526 cu. yd. excavation, 4277 cu. yd. paving, I-beam bridge over drainage ditch, 18,950 lb. struc. steel; Scott County—4,259, 2,555, 5,000, 4,992 mi. 20-ft. conc., Benton-Sikeston, 217,054 cu. yd. excavation, 198,208 sq. yd. paving; T. H. Cutler, Ch. Engr.

Missouri—State Highway Dept., Jefferson City, received low bids for 6 roads: Audrain County—3 mi. 18-ft. gravel, R. G. Aldridge, Kansas City, Kan., \$26,593; Cooper County—18 mi. 16-ft. gravel, John Spitzcaufsky, 2452 Benton Blvd., Kansas City, Mo.; Maries County—11 mi. 20-ft. conc., Koss Construction Co., Des Moines, Iowa, \$142,070; 3.5 mi. 16-ft. gravel, John Spitzcaufsky; Miller County—2.7 mi. 18-ft. gravel, Martin Wunderlich, St. Paul, Minn., \$25,567; Monticau County—4.7 mi. 16-ft. gravel, M. E. Gillioz, Monett, Mo., \$33,100; T. H. Cutler, Ch. Engr.

Missouri—State Highway Dept., Jefferson City, considering cut-off for U. S. Hwy. No. 40 from Blue Ridge road to Thirty-first St., Kansas City.

Mo., Cape Girardeau—City Council considering widening and paving Bellevue St.; E. L. Sailer, City Engr.

Mo., Eldon—City, E. H. Austin, Clk., preparing plans for 7 blocks paving; J. W. Shikles & Co., Consol. Engrs., 708 New York Life Bldg., Kansas City.

Mo., Independence—State Highway Comsn., Jefferson City, receives bids soon for grading, draining and paving 2 mi. Highway No. 24, in Independence and west of city, Jackson County; T. H. Cutler, Ch. Engr. 6-19

Mo., St. Joseph—City, Bd. of Public Works, received low bid from Consolidated Paving & Material Co., Seventh and Olive Sts., at about \$84,001 for 30,156 sq. yd. resurfacing, Noyes Blvd.

Mo., St. Louis—City, Bd. of Public Service, opens bids Aug. 24 for building sidewalks, rebuilding and improving streets; W. W. Horner, City Engr.

North Carolina—State Highway Comsn., Raleigh, plans paving Federal Highway No. 1 and North Carolina No. 50 through sand hills and widen Highway No. 10 between Raleigh and Johnston County via Garner; John D. Waldrop, State Highway Engr.

N. C., Charlotte—City, R. W. Rigsby, Mgr., considering receiving bids about Sept. 1 for South College St.

N. C., Charlotte—City, Robert L. Brown, Commr. of Public Works, contemplates grading, paving, sidewalks and gutters and steel and conc. underpass, College St., est. cost \$59,300; Wayt Thomas, City Engr.

N. C., Winston-Salem—City, Public Works Committee, Harry L. Shaner, Commr., received low bid from C. A. Heilig, W. Highlands, for 2410 sq. yd. 4 and 5-in. sidewalks and 275 sq. yd. driveways on Liberty St. 7-10

Okla., Arapaho—State Highway Comsn., Oklahoma City, plans letting contract for highway work in Custer County; sold bonds.

Okla., Minco—City receives bids soon for grading, curbing and 9250 sq. yd. conc. paving, Dist. No. 1, cost \$31,000.

Okla., Tulsa—City, George L. Watkins, Mayor, preparing plans for widening Third St. to 44 ft.; plans Owasso Ave. underpass connecting Fourth and Third Sts.; Howard Parker, City Engr.

Okla., Tulsa—City Comsn. plans letting contract in fall to pave remaining streets in Bren Rose addition.

S. C., Abbeville—State Highway Comsn., Columbia, approved expending \$25,000 to relocate Abbeville-Antreville road at Martin's Mill; Chas. M. Moorefield, Ch. Highway Engr. 7-17

Tennessee—Dept. of Highways and Public Works, Nashville, receives bids Aug. 29 for 9 roads and 10 bridges; Trousdale County

—2.5 mi. grading, draining, roadway and approaches to bridge over Cumberland River near Hart's Ferry; Blount County—7 mi. draining, Highway No. 33-A; Henderson County—5 mi. grading, draining, Highway No. 22; Montgomery County—4 mi. grading, draining, Highway No. 13; bridge over 20-ft. span; 6 mi. grading, draining, Highway No. 76; Van Buren County—6 mi., Highway No. 30; bridge over 20-ft. span; Hamilton-Meigs Counties—10.5 mi., Highway No. 58; 4 bridges over 20-ft. spans; Sumner County—7 mi., Highway No. 109; 3 bridges over 20-ft. spans; 3.5 mi., roadway and approaches to Woods Ferry Bridge across Cumberland River; Roane County—conc. and steel bridge over Clinch River, Highway No. 1, near Kingston; T. E. McEwen, State Highway Engr.

Texas—State Highway Comsn., Austin, appropriated funds for maintenance and do d repair work in 25 counties, including: Ellis, Dickens, Dallas, Henderson, Anderson, Waller, Coleman, Bee, Grayson, Fayette, Baylor, Knox, Archer, Refugio, Morris, Liberty, Palo Pinto, El Paso, Hardin, Denton, Midland, Travis, Brazos, Young; Gibb Gilchrist State Highway Engr.

Tex., Austin—City, Adam R. Johnson, Mgr., plans paving Barton Springs road 56 ft. wide, probably gravel base, bit. topping.

Tex., Beaumont—City, Paul H. Millard, Mgr., considering paving Ewing, McFadden, Oakland and Willow St.; R. C. Black, City Engr.

Tex., Brownwood—Brown County, E. M. Davis, Judge, plans 19,617 mi. grading, draining Highway 10, including bridges, est. cost \$178,600; Leo Ehlinger, Res. Engr.

Tex., Centerville—Leon County, W. D. Lacey, Judge, plans 12,636 mi. reln. conc. pavement Highway 43; J. A. Waller, Res. Engr.

Tex., Centerville—Leon County, W. D. Lacey, Judge, plans 12,453 mi. reln. conc. Highway 43; J. A. Waller, Res. Engr.

Tex., Childress—Childress County, W. B. Howard, Judge, plans 12,503 mi. grading and draining Highway 5, est. cost \$125,000; Sumner D. Bacon, Res. Engr.

Tex., Childress—Childress County Commrs. let contracts in Sept. for 14 mi. grading, Highway No. 5, cost \$70,000; S. D. Bacon, County Engr.

Tex., Corpus Christi—City, P. G. Loven-skiold, Mayor, opens bids Aug. 29 for paving, widening and improving Mesquite St.; Thos. Koester, City Secy.

Tex., Decatur—Wise County, Carl Faith, Judge, plans 4,249 mi. grading, draining Highway 114, est. cost \$69,300; C. L. Williford, Res. Engr., Dallas.

Tex., Fort Worth—City, O. E. Carr, Mgr., considering paving Jessamine St.

Tex., Gainesville—Cooke County, J. C. Cox, plans 11,304 mi. grading, draining Highway 5; W. D. Dockery, Res. Engr.

Tex., Georgetown—Williamston County plans 15 mi. asphalt, Highway No. 29, estimated cost \$26,730.

Tex., Houston—Harris County, Norman Atkinson, Judge, plans 2,934 mi. grading and draining Highway 35, est. cost \$65,000; A. J. Wise, Res. Engr.

Tex., Houston—Harris County Commrs. Court, Norman Atkinson, County Judge, has low bid from B. P. Panas & Co., Esperson Bldg., at \$27,016 for grading, draining La Porte road, from Sinco underpass to Deer Park; low bid from McClendon & Green to shell 1 mi. Allen-Genoa road; Charles R. Halle, County Engr.

Tex., Houston—City, W. E. Monteith, Mayor, received low bid from Uvalde Rock Asphalt Co., 820 Dowling St., at \$50,694 for Laurel; from Griswold Bros., 3840 Polk St., for graveling 6 streets; J. M. Nagle, City Engr.

Tex., Houston—City, W. E. Monteith, Mayor, and Harris County Commrs. Court, Norman Atkinson, Judge, plan receiving bids Aug. 20 for paving Yale St.; J. M. Nagle, City Engr.

Tex., Houston—City, W. E. Monteith, Mayor, has low bid from Uvalde Rock Asphalt Co., 820 Dowling St., at \$63,647 for brick paving and \$50,694 for asphalt paving, Crawford St.; J. M. Nagle, City Engr.

Tex., Jasper—Jasper County, A. S. McKee, Judge, plans 3,813 mi. grading, draining, gravel base course with triple bit. surface treatment Highway 63; H. R. Pursifal, Res. Engr.

Tex., Madisonville—Madison County, W. L. Robinson, Judge, and Brazos County, A. S. McSwain, Judge, plan 1,064 mi. grading, draining Highway 21; A. McCormick, Res. Engr.

Tex., Madisonville—Madison County, W. L. Robinson, Judge, plans 6,328 mi. grading, draining Highway 21, est. cost \$50,380; A. McCormick, Res. Engr.

Tex., Palestine—State Highway Comsn., Austin, will let contract in Sept. to pave State Highway No. 43, Anderson County, from Palestine to Tucker; E. H. Sheldon, Anderson County Judge; Gibb Gilchrist, State Highway Engr.

Tex., Perryton—Ochiltree County, J. M. Grisby, Judge, plans 17,990 mi. grading, draining Highway 117, est. cost \$36,850; A. E. Dyatt, Res. Engr., Amarillo.

Tex., Sonora—City, Roy Aldwell, Mayor, making preliminary surveys for street paving in connection with extension of Santa Fe R. R.; E. P. Arneson, Engr., 422 Gunter Bldg., San Antonio.

Virginia—State Highway Comsn., Richmond, opens bids Aug. 26 for 4 roads and bridge: Pulaski County—6.8 mi., bit. material, Route 10, 100,000 gal. bit. material; Elizabeth City County—3.4 mi., conc., Route 39, 23,215 sq. yd. conc., 11,505 cu. yd. excavation; Princess Anne and Norfolk Counties—10 mi. mac. or gravel, Route 502, 21,571 cu. yd. mac. or gravel, 72,172 cu. yd. excavation, 19,746 lb. reln. steel; Warwick County—2 mi., conc., Route 39, 21,125 sq. yd. conc., 3635 cu. yd. conc. beam spans and 105-ft. low steel truss spans, 134,520 lb. reln. steel, 118,800 lb. struc. steel; C. S. Mullen, Ch. Engr.

Virginia—State Highway Dept., Richmond, F. D. Henley, Right-of-way Engr., making survey on Suffolk-Portsmouth Hwy. to widen road 4 ft.

Virginia—State Highway Comsn., Richmond, plans surveying Route No. 13, Pedlar River through Long Mountain vicinity toward Amherst, Amherst County.

Va., Richmond—City, R. Keith Compton, Dir. of Public Works, receives bids Aug. 14 for 10,000 sq. yd. spall paving on conc. base; 12,000 sq. yd. sheet or Warrenite bitulithic on conc. base.

Contracts Awarded

Ala., Birmingham—City Comsn. let contract to Dunn Construction Co., Lincoln Life Bldg., at \$13,000, for paving 14th St. underpass; work to start in about 10 days; A. J. Hawkins, City Engr.

Ala., Montgomery—City, W. A. Gunter, Mayor, let contract to R. G. Lassiter Co., Shepard Bldg., at \$30,704, to pave Montezuma road; J. M. Garrett, City Engr.

Ala., Phenix City—City Commrs. let contract to Way Construction Co., Valdosta, for paving Fifth St.

Kentucky—State Highway Dept., Frankfort, let contract for 3 roads: Harrison County—9.972 mi. grading, draining Cynthia-Brooksville, James C. Macht, Newport, Ky., \$87,606; Webster County—6.46 mi. amiesite top on retread binder, Main St., in Dixon, Carey-Reed Co., Guaranty Bank Bldg., Lexington, \$11,304; H. D. Palmore, State Highway Engr.

Kentucky—State Highway Dept., Frankfort, let contract for surface and retread in 11 counties: Group 3—Owen County, Southern Oil & Tar Co., Clay St. and River Road, Louisville, \$54,912; Group 4—Harrison-Scott Counties, R. B. Tyler Co., 1446 Levering St., Louisville, \$29,184; Group 5—Bracken-Pendleton Counties, R. B. Tyler Co., \$31,478; Group 6—Fayette-Madison Counties, Carey-Reed Co., Guaranty Bank Bldg., Lexington, \$24,943; Group 7—Boyle-Lincoln Counties, Carey-Reed Co., \$9456; Group 8—Lincoln County, R. B. Tyler Co., \$17,740; Group 9—Rockcastle-Madison Counties, Carey-Reed Co., \$44,548; Group 10—Laurel-Whitley Counties, F. G. Breslin, 32nd and Market St., Louisville, \$40,084.

Ky., Frankfort—City Council, T. E. Kenney, Mayor, let contract to Andrews Asphalt Paving Co., Hamilton, Ohio, for paving 7 streets with Trinidad asphalt, including Broadway, Washington, Clinton.

Ky., Paducah—McCracken County Fiscal Court let contract to Ira Bruntley to gravel ¾ mi. Brunley road at 44 cents per yd.; to A. Wright to gravel 1.1 mi. Gum Springs-Olivet Church road at 69 cents per yd.; Will Warren, County Engr.

Miss., Greenwood—City, Bonner Duggan, Clk., let contract to Soclay Paving Co., Inc., Provident Bldg., Chattanooga, Tenn., at \$21,539, for brick on conc. base paving W. Front St.; work to start immediately. 7-31

Miss., Jackson—City Commrs. let contract to Dunn Construction Co., Merchants Bank Bldg., for 15,000 yd. 2-in. asphaltic conc. on 6-in. reinforced 1, 2 and 4 conc. base at

about \$2 per yd.; to G. L. Root, St. Ann St., for 1200 yd. 4-in. sidewalks at \$1.28 per yd., and 1300 ft. curb at 34 cents per ft.; to Merrill Engineering Co., Lamar Bldg., all Jackson, for 600 yd. 4-in. sidewalks at \$1.30 per yd., 1400 ft. curb and gutter at 65 cents per ft.; J. J. Halbert, City Engr.

Miss., Kosciusko—Attala County Road Comrs. let contract for 56 mi. gravel roads: To Rainey & Allen for Beats 2 and 3; to Hester & Sanders for Beats 1, 4 and 5. 7-24

Miss., McComb—City, J. A. Kramer, Mayor, let contract to Merrill Engineering & Construction Co., Lamar Bldg., Jackson, for 6830 sq. yd. grading, draining, paving, curb, gutters, etc.; Henry A. Mentz & Co., Const. Engr., Hammond, La. 7-24

Miss., Oxford—Lafayette County Bd. of Suprs., G. A. Woodward, Chancery Clk., let contract to Mike Harvey, at \$17,630.60, for 3.442 mi. College Hill Spur road; lately noted bids opened July 8. 6-26

Miss., Poplarville—Pearl River County Bd. of Suprs. let contract to Joe P. Smith, Poplarville, for graveling 2 roads in Dist. No. 4; 2½ mi. Picayune-Caesar road; 1 mi. road from Goodyear to Picayune-New Palestine Church road. 7-31

Miss., Yazoo City—Yazoo County Bd. of Suprs. let contract to Shrupline Construction Co., Forest, at \$14,398, for graveling 18.2 mi. road, Dist. 3; gravel to Concrete Gravel Co., Carter Bldg., Hattiesburg, \$28,980.

Mo., Kansas City—City, Matthew S. Murray, Dir. of Public Works, let contract to Torson Construction Co., 46th and Gilham Rd., at \$47,925, for conc. paving Elmwood Ave.

Oklahoma—State Highway Comsn., Oklahoma City, let contracts at about \$15,000 for oiling 184 mi. 13 roads: Vance Bros., Kansas City, Mo., \$3308.80; Nowata Imperial Trucking Corp., 1900 Central St., Kansas City, Mo., \$4,279.60; Satherwaite & Kitchens, \$5021; Flenniken Construction Co., American Bank Bldg., Shreveport, La., \$930; J. S. Turner, \$800; Roy Turner Paving Co., \$957.60; A. R. Losh, State Highway Engr.

S. C., Greenville—Carolina Road Surfacing Co., Capers Bldg., has contract to surface treat 2 mi. Cedar Lane road.

Tennessee—Dept. of Highways and Public Works, Nashville, let contracts for 6 roads and 4 bridges: Shelby County—2.188 mi. Highway No. 14, Ziegler Construction Co., American Trust Bldg., Nashville, \$111,180; Roberts County—4.240 mi. grading, draining, Highway No. 11, R. F. Pryor & Co., Mayfield, Ky., \$22,387; Hickman County—conc. bridge and approaches over Cane Creek, Highway No. 100, Fite Construction Co., Dickson, Tenn., \$51,719; Chester County—3 bridges, State Highway No. 100, Frazier & Cooke, Wickliffe, Ky., \$90,550; 12.095 mi. grading, draining, Highway No. 100, Gregory-Chandler Co., Virgilina, Va., \$125,059; Cooke County—12.680 mi. grading, draining, Highway No. 75, Nello L. Teer, Geer Bldg., Durham, N. C., \$179,658; Davidson County—6.641 mi. grading, draining, Highway No. 106, R. E. Martin, Cotton States Bldg., Nashville, \$72,940; Coffee County—10.043 mi. highway No. 53, Municipal Paving & Construction Co., Cotton States Bldg., Nashville, \$46,659; T. E. McEwen, State Highway Engr. 7-17

Texas—State Highway Comsn., Austin, let contracts for 3 roads and culverts: Lubbock County—16.1 mi. grading, draining, Highway No. 9, W. S. Thompson, San Angelo, \$29,835; Harris County—1.3 mi. grading, conc., Highway No. 3, Russ Mitchell, Petro'eum Bldg., Houston, \$57,073; Maintenance contracts include: Archer County—140 ft. multiple box culverts, Highway No. 79, L. D. Parks, Newcastle, \$10,194; Knox Counties—33 ft. multiple box culverts, Highway No. 30, Witt, Williams & Latum, Granfield, Okla., (tentative award); Burnet County—10 mi. double bit surface treatment, Highway No. 74, Brown & Root, Austin, \$23,180; Gibb Gilchrist, State Highway Engr. 7-24

Texas—State Highway Comsn., Austin, let contracts for 7 roads: Childress County—13.4 mi. conc., Highway No. 5, Stuckey Construction Co., Kemp Hotel, Wichita Falls, \$280,827; Ector County—7.6 mi. grading, draining, triple bit surface treatment, Highway No. 137, Cocke & Braden, Marshall, \$81,908; San Jacinto County—11.1 mi. grading, draining, Highway No. 150, W. E. Lee, West Point, \$57,485; Navarro County—9.5 mi. grading, draining, Highway No. 13, E. R. Beach, Throckmorton, \$33,629; Knox County—12.7 mi. grading, draining, Highway No. 24, Huddleston & Works, Crosbyton, \$59,758; maintenance contracts include: Lavaca County—14.2 mi. seal coat application, Highway No. 72, Cocke & Braden, \$8523; Fayette

County—4.6 mi. double bit surface treatment, Highway No. 3, Cocke & Braden, \$7277; Gibb Gilchrist, State Highway Engr.

Tex., Fort Worth—State Highway Comsn., Austin, let contracts for 3 roads in Tarrant County: 7 mi. conc., Highway No. 2, from M.-K.-T. underpass to Johnson County line, General Construction Co., Capps Bldg., Fort Worth, \$182,108; 9 mi. grading, draining, Highway No. 10, Womack, Henning & Rollins, \$72,225; 4 mi. grading, draining, Highway No. 121, J. F. Foty, Burt Bldg., Dallas, \$17,371; Gibb Gilchrist, State Highway Engr.

Tex., Fort Worth—City, O. E. Carr, Mgr., let contract to General Construction Co., Capps Bldg., at \$51,593, for rein. conc. paving Grapevine road, 52 ft. wide.

Tex., Nacogdoches—T. L. James & Co., Ruston, La., has contract, at \$48,684, for 25,000 sq. ft. 2-in. asphalt on rock paving, driveways, campus State Teachers College.

Va., Norfolk—City, I. Walke Truxton, Mgr., let contract to F. J. McGuire, 39th St., Norfolk, to widen Granby St. 20 ft.; Walter H. Taylor, III, Director Public Works.

W. Va., Charleston—City, H. C. Walker, City Mgr., let contract to K. E. Reed & Co., Stop 8, South Charleston, at \$18,999, for paving Washington St. with Kentucky rock asphalt on 7-in. rein. conc. base, 1:2:3 mix, 7-in. rein. conc. and integral curb Northover road, at \$7165.75; N. Middle St., at \$23,798; to George Bays, 306½ Seventh Ave., and M. J. Smith, 1010 First Ave., for sidewalk improvements on various streets. 8-7

Sewer Construction

Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported

Ala., Birmingham—See Roads, Streets, Paving.

Ga., Atlanta—City expend \$10,000 for repair and replacement of trunk sewers.

La., New Orleans—Sewerage and Water Bd., reported, received low bids for following work: Contr. 108-D, welded steel pipes for Drainage Sta. No. 9, at \$42,917 from C. C. Elmer Tank & Boiler Works; Contr. 113-D, traveling crane for drainage pumping station No. 9, Equitable Equipment Co., 410 Camp St.; Contr. 206-S, welded steel pipes for sewage pumping station D, C. C. Elmer Tank & Boiler Works, Jefferson Highway Southport; Contr. 207-S, e. i. pipe and fittings for sewage pumping station D, Hardie-Tynes Mfg. Co., Birmingham, Ala.; bids taken under advisement. 6-19

La., New Orleans—Sewerage and Water Bd. receives bids at office of A. G. Moffat, Sec., Room 401, 526 Carondelet St., Oct. 1 for following contracts: 116-D, riveted steel pipes for drainage stations 3 and 7; Contr. 117-D, truck type switchboards, motor generators, transformers and accessories for drainage stations 3 and 7; Contr. 210-D lined canal in Florida Ave.; plans, etc., on application. 6-19

Miss., Sanatorium—State Bd. of Health, State Tuberculosis Sanitarium, receives bids Aug. 25 for construction of sewage treatment plant. John Rowan, Business Mgr. 7-24

Mo., St. Joseph—City, Hale D. Judson, City Engr., plans improvements to sewers.

Okla., Sulphur—City votes Aug. 26 on sewer bonds. See Financial News Column.

S. C., Greenville—T. C. Gower, Chmn. Greater Sewer Comsn., petitioned city for incorporation of Parker Water and Sewer Sub-District and for right to vote on \$525,000 bonds for water and sewers; district will include territory between Paris Mountain Rd. on north and mill on south, with exception of City View and West Greenville.

N. C., Salisbury—City, P. P. Pilcher, City Mgr., receives bids Aug. 21 for sewerage improvements. See Want Section—Bids Asked.

Tenn., Nashville—W. L. Hailey, 314 Forty-second Ave., N., reported, has contract for clay pipe sewers.

Tex., Dallas—Hawley, Freese and Nichols, Const. Engrs., 417 Capps Bldg., Fort Worth, selected by city to prepare plans and specifications for sewage disposal plant, activated sludge plant; plans in progress.

Tex., San Antonio—Swiss Plaza Co., Builders' Exch. Bldg., reported, will receive contract for Sixth St. storm sewer.

Tex., Sealy—E. L. Dalton, Wilson Bldg., Dallas, constructing sewer system, 50,000 ft. of mains and disposal plant.

Tex., Weimar—City voted \$42,000 sewer bonds. 7-31

Telephone Systems

Fla., Lake Placid—Inter-County Telephone & Telegraph Co. applied to State Railroad Comsn., Tallahassee, for permission to establish exchanges at Lake Placid and Boca Grande.

Ga., Dawson—Georgia Continental Telephone Co., reported, acquired assets of Dawson Telephone Co.; will operate Dawson exchange and exchanges in 20 cities and towns. 6-12

Ga., Fitzgerald—Federal Public Service Corp., Chicago, Ill., reported, acquired Central Telephone Co., recent purchasers of Bowen Telephone Co. and other south Georgia telephone units, including Central Telephone Co., Southern Telephone & Construction Co., and Southeastern Telephone Co.

La., New Iberia—Southern Bell Telephone & Telegraph Co., Atlanta, Ga., construct 1 story and basement central office building; rein. conc. foundation; 66x40 ft.; brick veneer.

N. C., Charlotte—Station WBT, Inc., E. J. Gluck, Gen. Mgr., probably order equipment costing \$98,600 from RCA Victor Co., Woolworth Bldg., New York, for increasing power 50,000 watts; ask bids at once on general construction work; R. L. Whitcomb, Engr., 201 Providence Road. 7-10

N. C., Greensboro—North Carolina Broadcasting Co., Inc., capital \$100,000, chartered; Wayne M. Nelson, O. Henry Hotel Bldg.; operate WNRC broadcasting station.

Tenn., Memphis—Dept. of Commerce, Aeronautics Branch, Washington, D. C., leased site for \$40,000 radio station.

Tex., Dalhart—Standard Telephone Co. let contract to J. E. Hill, Dalhart, for \$18,000 telephone bldg., Sixth and Denver St.; 33x92, 1-story, brick, stucco, fireproof; total investment including switchboard and other equipment, \$50,000.

Tex., Fort Worth—Moran Bldg. Supply Co., 806½ Taylor St., reported, has contract for steel sash for building for Postal Telegraph-Cable Co., Inc., 609 Main St.; Butcher & Sweeney Co., Gen. Contr., 806½ Taylor St. 4-24

Tex., Spearman—Western Telephone Corp. of Texas, Guymon, L. L. Dewey, Dist. Mgr., has awarded contract for telephone exchange; brick. 5-29

W. Va., Moundsville—Chesapeake & Potomac Telephone Co. of West Virginia, Charleston, plans expending \$26,000 for improvements and additions to system; place additional cables in northeast section extending into Glendale.

Textile Mills

N. C., Charlotte—Rock Hill Hosiery Co., Rock Hill, S. C., reported, acquired Charlotte Knitting Co., Kingston Ave.

N. C., Gastonia—Goldberg Bros., owners and operators of Clara, Dunn, Armstrong and Piedmont Mills, Gastonia, and American No. 1 and 2 Mills, Bessemer City, leased building; installing machinery to manufacture and dye sewing threads, to be known as throwing mill.

N. C., Lenoir—Lenoir Cotton Mills, reported, let contract to Bahnsen Co., Reynolds Bldg., Winston-Salem, for system of humidifiers.

Tenn., Rockwood—Rockwood Welfare Corp., reported, let contract to J. G. Murphy, Harriman, for erection of plant for Cumberland Silk Mills. 7-31

Water Works

Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification

Ark., Nashville—Southwestern Gas & Electric Co., Texarkana, Ark.-Tex., advises that contract has been let to Southwest L. E. Myers Co., Allen Bldg., Dallas, Tex., for damming Mine Creek north of city to form lake for water supply, with A. B. Cupp, Nashville, Ark., sub-contractor; project consists of earth dam with conc. and brick building for housing filter and pumping equipment and will be equipped with necessary

pumping units, motor driven, supplying 750 g.p.m., with an emergency unit, driven by gas engine of like capacity; work to begin in 30 days; practically all contracts for equipment and work let. 7-31

Fla., Hollywood—City, C. E. Burgoon, City Mgr., receives bids Aug. 27 for water works including deep wells, rein. and stuccoed pump houses, wooden settling tank, pipe lines, gravity filter, chemical dry feed machines, carbon dioxide generating plant, elevated tanks, sludge sewer, water mains, oil engine generators, etc. See Want Section—Bids Asked.

Ky., Paris—City plans erecting water works plant; may purchase equipment from Paris Water Co.; Caldwell & Co., Nashville, Tenn., will dispose of bond issue of \$250,000, proceeds to be used for construction.

La., Baton Rouge—Baton Rouge Water Works Co., H. P. Connell, Mgr., expend \$100,000 for extension water works, 11 miles of 6, 8 and 12-in. c. i. water mains; C. B. Stewart, 155 N. Dufronq St., contractor for trenching; all other work by company's forces. 8-7

Md., Baltimore—Charles Brown Cornell, Youngstown, Ohio, appointed construction engineer of proposed \$3,500,000 Prettyboy dam and reservoir. 8-4

Md., Baltimore—Bd. of Awards receives bids Aug. 20 for excavating trenches and laying mains in Pennington Ave. and for furnishing copper pipe. See Want Section—Bids Asked.

Miss., Indianola—R. D. Cole & Co., Newnan, Ga., reported, has contract for 100,000 gal. elevated tank in connection with extension and completion of water system; Dunn Construction Co., Lincoln Life Bldg., Birmingham, Ala., has contract for additional water mains and installation of marine engine and pump, 500 gal. per minute capacity. 6-12

Okla., Connersville—City, W. J. Rogers, Mayor, advises are not contemplating any water works improvements at present time. 8-7

Okla., Mangum—City, reported, plans \$15,000 improvements to water system, install equipment.

Okla., Oklahoma City—City, Charles F. Bretz, Water Supt., may vote in fall on \$1,300,000 bonds for water works including tanks, additional mains and pumping equipment. 7-24

S. C., Rock Hill—Winthrop College let contract to L. E. Hays, Rock Hill, for water mains connecting with city water mains.

Tenn., Columbia—Tennessee Electric Power Co., Chattanooga, reported, plans erection of reservoir, construction c. i. water mains S. Main St., W. Seventh, E. Ninth and High Sts.

Tenn., Fayetteville—City, reported, plans water works.

Tenn., Memphis—Bd. of Water Comsn., 105 N. Second St., reported, let contract to U. S. Cast Iron Pipe & Foundry Co., Birmingham, Ala., for pipe for water mains.

Tenn., Memphis—City, reported, plans auxiliary water plant with daily capacity 15,000,000 gal. on 20-acre site; cost \$2,000,000; later may vote on bonds.

Tenn., Memphis—City, reported, received low bid at \$13,250, from Ahrens-Fox Fire Engine Co., Colerain & Alfred Sts., Cincinnati, Ohio, for fire-fighting equipment. 7-24

Tenn., Nashville—City Council authorized Harding Road Water Co., Inc., to install 16-in. main to be extended out Harding Rd. and Belle Meade Blvd. to Percy Warner Park; connect with present system.

Tex., Houston—City, reported, let contract to Pitometer Corp. of America, 50 Church St., New York, to make leakage survey of water system and recommend repairs.

Tex., Kerrville—Wilson & Seward, Kerrville and Brady, reported, have contract at \$58,000 for water works improvements.

Va., Clarendon—Arlington County install 8000 ft. of water main extension. 6-26

Woodworking Plants

Ky., Paducah—Paducah Box & Basket Co., 11th and Caldwell Sts., plans rebuilding warehouse units recently burned.

La., DeQuincy—J. S. Price, Pres. Evangeline Highway Assn., New Orleans, reported, interested in establishment of 20,000 capacity stove mill by Leesville firm.

N. C., Lexington—Directors of Dixie Furniture Co. approved merger with Elk Furniture Co., J. T. Hedrick; plans changing line of Dixie from bedroom furniture to dining room furniture.

Tex., Houston—Martin-Wilder Co., Harvey L. Martin, Pres., 1905 Taft St., started erecting \$65,000 millwork plant, Shepherd Dr. and Banks St., South End; 1 story, 20,000 sq. ft. floor space, factory type, corrugated iron, steel frame; employ about 50.

Tex., Pharr—McCullough Box & Crate Co., capital \$25,000, incorporated; L. G. McCullough, T. J. Chidlow.

W. Va., Huntington—Standard Furniture Co., Fourth Ave. and Ninth St., capital \$50,000, chartered; Samuel Roth, M. L. Burnett.

W. Va., Huntington—Acme Casket Co., capital \$10,000, chartered; Lucien F. Wiley, Myron C. VanGorder, 2102 16th St.

FIRE DAMAGE

Ark., Banks—R. M. Child's store; Neal & Co.'s store; Karl Neal's restaurant; loss \$15,000.

Ala., Dothan—LeRoy Pitts' residence, Cottonwood Rd.

Ark., Blytheville—Garage of W. I. Denton Automobile Co.; loss \$75,000.

Ark., Little Rock—Dr. E. E. Holland's residence, 420 Selma St.

Ark., Little Rock—Bottling department and generating room of Ozark Fruit Co.'s plant foot of North St.; loss \$25,000.

Ark., Little Rock—Residences of W. M. Campbell and Harold Lawson, 2309 and 2317 State St.

Ark., Morrilton—Joe Nemeck's residence, South Morrilton; loss \$10,000.

Ark., Weona—Mill of Tschudy Lumber Co., Memphis, Tenn.; loss \$250,000.

Fla., Perry—W. T. Henry's business building on Drew St.

Fla., Sarasota—Residence, 536 Weber Ave., occupied by John S. Woolard; loss \$15,000.

Ga., Atlanta—M. Flax's store, Kennedy St. near Strong St., and 3 dwellings.

Ky., Carlisle—Ollis Finch's residence, Dorsey Ave.; Abner Lyman's residence, Barterville Rd. near Carlisle.

Ky., Paducah—Paducah Box & Basket Co.'s 3 warehouse units; loss \$50,000.

Ky., Louisville—Albert Hess Furniture Co.'s store, 550 E. Market St.; loss \$50,000.

Ky., Louisa—J. T. Justice Lumber Co.'s lumber yard and mill; residence of Thomas Luther; loss \$35,000.

Ky., Shepherdsville—Barns and silos on farm of E. C. Tyler on Preston Street Road; loss \$10,000.

La., Baton Rouge—R. L. Sanders' residence, Rosalie Park, Plank Rd.

La., Crowley—Maydel Mercantile Co.'s store; loss \$10,000.

La., Hammond—D. T. Heath's residence, E. Morris Ave.

La., New Orleans—Refinery plant in St. Bernard's Parish of Chalmette Petroleum Corp., Union Indemnity Bldg.; loss \$25,000.

La., Vidalia—R. H. Diggers' residence, Carter Ave.

La., Winnsboro—Stave mill of H. C. Eckhardt and W. W. Eckhardt; loss \$10,000.

Md., Adamstown—Barn on farm of E. J. Honaker; loss \$10,000.

Md., Baltimore—Machine shop and storage shed at shipbuilding plant of Arundel Corp., Pier 2, Pratt St., at Wagner's Point.

Md., Glen Arm—F. X. Hooper Co.'s power house of printing press manufacturing plant; loss \$10,000.

Md., Hagerstown—Garage and stable of Hagerstown Dairy Co., S. Potomac St., and

paint shop of Robt. B. French, 823 Cedar St.; loss \$15,000.

Md., Salisbury—Warehouse of D. J. Elhott & Co.; loss \$25,000.

Md., Silver Spring—Saml. Grubbs residence, East and West Highway near 16th St. extended.

Miss., Glen Allen—Glen Allen Hotel, operated by N. G. Jordan; loss \$10,000.

Miss., Merigold—J. B. Lee's four stores; loss \$10,000.

Miss., Montgomery—Camp Hill School; loss \$35,000; address School Bd.

Miss., Sturgis—O. L. Ray's store; Mrs. John McReynolds' millinery shop; loss \$10,000.

Miss., Winona—Mrs. W. L. Machman's cafe; loss \$10,000.

Mo., Jefferson City—Lee Jordan's residence; loss about \$50,000.

Mo., St. Louis—Building at 6128 Easton Ave., occupied in part by Aubert Market owned by T. J. McLaughlin, 7232 St. Andrews Ave.; loss \$10,000.

N. C., Henderson—Mack C. Rogers' residence, Peachtree St.

N. C., Newton—Newton Furniture Co.'s store; loss \$15,000.

Okla., Broken Bow—J. B. Hart's residence, East Broken Bow.

Tenn., Manchester—Dr. D. H. Sneed's residence.

Tenn., Memphis—Warehouse of James E. Stark Lumber Co., Seventh St. and Illinois Ave.

Tex., Amarillo—Building, First Ave. and S. Pierce St., occupied by Plains Wholesale Grocery Co., B. F. Avery Plow Co. and Junior Coffee Co.; loss \$50,000.

Tex., Cash—Post Office and general store. Address The Postmaster.

Tex., Brownwood—Montgomery Ward Co.'s store; loss \$25,000.

Tex., Marshall—Fred M. Lowery's building, Carter St.; loss \$10,000.

Tex., Mission—W. H. Parks' garage and filling station; loss \$20,000.

Va., Berryville—Barn on farm of Arthur Lee, known as Mike Crow Farm, 5 miles from Berryville; loss \$10,000.

Va., Gore—Lumber plant of J. Natwick & Co., Munsey Bldg., Baltimore, Md.; post office operated by B. L. Larrick, Postmaster; filling station operated by Charles Frank; station, warehouses, etc., of Winchester & Western R. R. Co., F. C. McKee, Pres., Pittsburgh, Pa.; W. M. Folford's residence; Wilbur Keran's garage, and other buildings; loss, reported, \$500,000.

Va., Harrisonburg—Venda Variety Store; loss \$15,000.

Va., Kilmarnock—E. D. Hopkins' residence near Kilmarnock.

Va., South Boston—Dr. Geo. A. Stover's residence.

Va., Stony Point—W. P. Kephart's residence, barn and outbuildings near Stony Point.

Va., Suffolk—Ward Bottling Works on N. Main St.

W. Va., Clarksburg—Dr. H. H. Moats drug store, 132 N. First St.; apartment building owned by Jackson Mining & Landing Co., Parkersburg; loss \$15,000.

W. Va., Sophia—M. L. and J. K. Tosh's store; hotel operated by William Brofferty; C. H. Webb's residence; loss \$15,000.

BUILDING NEWS

BUILDINGS PROPOSED

Association and Fraternal

Miss., Morton—City Council and Ancient Free and Accepted Masons have low bid at \$10,829 from Jones & Lindsey, Jackson, for city hall-lodge bldg.; J. M. Spain, Archt., Merchants Bk. & Tr. Bldg., Jackson. 7-24

Tenn., Nashville—Daughters of American Revolution erect replica of Fort Nashboro, Cumberland River; City to give \$10,000; Davidson County has given \$3750; State, \$7500.

Tex., Dallas—Young Men's Christian Assn., E. R. Brown, Pres., opens bids Sept. 1 for central bldg., Ervay St. near Patterson Ave.; \$800,000; brick, stone, steel and rein. conc., 14 stories; outdoor gymnasium 52x130 ft.; Anton F. Korn, Jr., Archt., Thomas Bldg. 7-17.

Tex., Dimmitt—Castro County Post, American Legion, Bob Allen, member, plans clubhouse.

Bank and Office

Mo., St. Louis—Lafayette Bank & Trust Co., A. C. F. Meyer, Pres., 1731 S. Broadway, erect \$45,000 bldg., Lemay Ferry Rd. near River Des Peres; brick, 2 stories and basement, comp. roof, steam heat; St. Louis Bank Building & Equipment Co., Archt., 900 Sidney St.; drawing plans.

Okla., Oklahoma City—First National Bank & Trust Co., Frank P. Johnson, Pres., accepted preliminary plans of Weary & Alford, 1923 Calumet Ave., Chicago, Ill., for 32-story bank and office bldg.; plans and specifications ex-

pected to be completed latter part Oct. when bids will be asked; hope to let contract about Dec. 1; in meantime, to let separate contract for excavation, foundation and retaining walls; 80,000 sq. ft. of space for banking section; 250,000 sq. ft. for offices; steel and rein. conc. construction. 8-7

Va., Covington—Virginia Public Service Co. erect \$40,000 office bldg.; plans by Frank D. Chase, Inc., Engrs., Chicago, Ill.; bids in.

Va., Waynesboro—First National Bank, Theo. Colner, Pres., remodel and enlarge building.

Churches

Ark., Springdale—First Methodist Church, E. E. Guinnup, Chmn., Bldg. Comm., rejected bids for \$80,000 bldg.; revising plans; buff brick, 2 stories and basement, tile roof; John P. Almand, Archt., Boyle Bldg., Little Rock. 7-31

Fla., Zephyrhills—Seventh Day Adventist Church, Elder H. C. Heckman, Pres., South-eastern Union of Conference, Chattanooga, Tenn., erect church.

Ga., Jessup—Methodist Church plans \$25,000 bldg.; brick, 2 stories, conc. footings; Lloyd Greer, Archt., Valdosta.

Miss., Durant—Baptist Church, Dr. J. S. Riser, Jr., having preliminary plans drawn by J. M. Spain, Archt., Merchants Bk. Bldg., for \$50,000 bldg.; brick, stone trim. 4-3

Mo., O'Fallon—Assumption R. C. Church, Rev. Peter Kurtenbach, Pastor, soon ready for bids for 1-story and basement stone church; Henry P. Hess, Archt., Ambassador Bldg., St. Louis.

Mo., St. Louis—Central Presbyterian Church, care John F. Green, 1130 Boatman's Bank Bldg., about ready for bids for \$300,000 bldg., Hanley Rd. and Davis Place; brick and stone, 1 story and basement; 2-story Sunday school later; Jamieson & Spearl, Archts., Arcade Bldg. 4-3

Okla., Tulsa—First Christian Church, Rev. Claude E. Hill, Pastor, 901 S. Boulder St., about ready for bids for \$250,000 Sunday school; brick, stone, steel and rein. conc., 4 stories and basement, 100x40 ft.; Smith & Senter, Archts., Philtower Bldg. 5-8

S. C., Charleston—Following contractors estimating on \$50,000 church, parish house and rectory for St. Peter's P. E. Church: Carolina Construction Co., Walker Bldg.; Gallivan Construction Co., Gallivan Bldg., both Greenville, S. C.; Southeastern Construction Co., 210 W. Second St., Charlotte, N. C.; Fiske-Carter Construction Co., 121 1/2 W. Main St., Spartanburg, S. C.; Simons-Mayrant Co., Peoples Bldg.; Charleston Constructors, Inc., 58 Broad St.; T. W. Worthy, N. Commercial Wharf; Artley Co.; M. L. Stephenson, 723 E. Bay St.; Dawson Engineering Co., 10 Gillon St.; G. M. Canady, 56 Maple St., all Charleston; J. D. Newcomer, Archt., 32 Broad St., Charleston; bids open Aug. 20.

Tenn., Raleigh—Methodist Church erect brick bldg.; 2 stories, comp. built-up roof.

Tex., Whiteright—Baptist Church plans building.

City and County

Ala., Birmingham—Jefferson County Bd. of Revenue, W. D. Bishop, Chmn., receives bids Aug. 15 (extended date) for \$200,000 Jefferson County Alma House; furnishings, equipment, etc., \$50,000; 1 two-story bldg. and 13 1-story bldgs.; Turner & Van Arman, Archts., 1221 Martin Bldg.; description and estimators in 7-31

Ark., Eudora—City remodel city hall \$15,000; brick, 2 stories; Petter & McAninch, Archts., Pyramid Bldg., Little Rock; receiving bids. 3-27

Ga., Atlanta—City Council, Parks Comm., Jas. L. Wells, member, interested in erection of \$50,000 clubhouse, Bobby Jones Golf Course.

Ga., East Point—City, Dr. J. A. Yeast, Chmn., Bond Comsn., expects to receive bids Sept. 15 for \$65,000 city hall and auditorium; steel and masonry, semi-fireproof, 2 stories, 35x66 ft. and 63x130 ft., auditorium seat 1250, tile and hardwood floors, conc. foundation, slate and built-up roof; Wm. J. Chase, Archt., 140 Peachtree St., Atlanta. 8-7

La., Donaldsonville—Commission Council receives bids Aug. 18 for central fire station, Railroad Ave.; brick, fireproof.

La., Rayne—City Council erect steel and brick jail; 18x26 ft., 3 cells; probably call for bids during August.

Tenn., Memphis—City Comsn. has low bid at \$13,278 from Consolidated Contractors, 658 East St., for fire station, Southern Ave. near Prescott St.; Henry J. Kramer, Archt., Goodwyn Inst. Bldg. 7-31

Tenn., Sneedville—Hancock County Court approved design for courthouse to replace burned structure.

Tex., Beaumont—Jefferson County Commrs. Court receives bids Sept. 3 for \$1,000,000 courthouse; separate bids same date for razing present bldg., heating and ventilating, plumbing and refrigeration, electrical work, elevators; bids at later date for jail equipment, furnishings and finishing hardware; Greek type, stone and light brick, terra cotta trim, central tower and two 3-story wings, 350 rooms; Fred C. Stone, Goodhue Bldg., and A. Babin, Perlstein Bldg., Archts.; following among estimators: Herman Weber, Perlstein Bldg.; McDaniel Bros., Kyle Bldg.; Christy, Dolph & Collins, Goodhue Bldg. 6-5

Dwellings

Ala., Montgomery—Cramton Lumber Co., 210 Pollard St., erect 6 dwellings, Bragg St., Woodrow Place and Holt St.; Lexington Rd., and Norman Bridge Rd.; total \$18,000.

Ark., Clarendon—Henry Bateman erect brick veneer residence; 1 1/2 stories, hardwood floors, 2 tile baths, tile roof; Estes W. Mann, Archt., Cotton Exch. Bldg., Memphis; preliminary plans.

Ark., Marianna—Leon Lewis erect brick veneer residence; 1 story, hardwood floors, comp. roof, 2 tile baths; Estes W. Mann, Archt., Cotton Exch. Bldg., Memphis, Tenn.; preliminary plans.

D. C., Washington—G. S. Seck, 6929 Georgia Ave., N. W., has permit for 2 brick and tile dwellings, 1439 Hemlock St. and 1416 Holly St.; 2 stories; \$14,000.

D. C., Washington—Herbert & Myers, 1013 15th St., N. W., have permit for 2 brick dwellings, 5704-06 Nevada Ave., N. W.; 2 stories; \$16,000.

D. C., Washington—H. P. Baxter, Architects Bldg., has permit for \$12,500 residence, 3340 Runnymede Place; brick, 2 stories.

D. C., Washington—Mrs. Natalie S. B. Yates, 2448 Massachusetts Ave., N. W., has permit for \$15,000 addition to residence; hollow tile and stucco, 3 stories.

D. C., Washington—Wm. Heard has permit for \$15,000 residence, 3331 O St., N. W.; 3 stories, brick.

Fla., Miami—Bankers Fidelity Investment Corp. erect \$15,000 dwelling and garage, 5565 Sheridan Ave.; John N. Bullen, Archt., Exchange Bldg.

Fla., Miami Beach—John Porter, Hartford, Conn., erect \$50,000 residence; rein. conc. foundation, hardwood and tile floors, stucco and tile roof, steel sash, garage and servants' quarters; John Bullen, Archt., Exchange Bldg., Miami.

Fla., Palm Beach—Ohan S. Berberyan, Worth Ave., erect residence, Peruvian Ave.; Marion Sims Wyeth, Archt., Wyeth Bldg.; bids in.

Fla., Palm Beach—G. Bryan Pitts; residence remodeling and additions; Treanor & Fatio, Archts., Phipps Plaza, Palm Beach; John B. Orr, Inc., 147 N. E. Sixth St., Miami, advises does not have contract as lately reported.

Ga., Atlanta—F. A. Leatherman, 150 Walton St., N. W., erect \$40,000 residence, Habersham Rd.; conc. foundation, brick, stone trim, hardwood and tile floors, steam heat; J. M. Russell, Archt., Standard Bldg.; about ready for bids.

La., New Orleans—Miss Edna Louque erect summer residence, Bayou Liberty Gardens.

Md., Baltimore—Frank Novak Realty Co., Gunther Bldg., erect 16 brick dwellings, 1200-14 and 1201-15 Lakeside Ave.; 2 stories, \$80,000.

Md., Towson, Baltimore—John F. Apsey, 2118 St. Paul St., Baltimore, erect stucco and shingle residence, Stevenson Ave. near Burke Ave.; 7 rooms, 3 baths; Kenneth C. Miller, Archt., Kingston Road.

Mo., Kansas City—Justin D. Bowersock, 3rd, care Fidelity Natl. Bk. & Tr. Co., purchased homesite, 50th St. near Wornall Rd.

Mo., Kirkwood, St. Louis—G. A. Noxon, care Wm. A. Sachse, Archt., 717 N. Kirkwood St., erect frame residence, Scott and Holmes Aves.; 2 stories and basement, irregular dimensions; bids in.

Mo., St. Louis—Edgar F. Peters, care LaBeaume & Klein, Archts., American Tr. Bldg., erect brick residence, Warson Rd. near Litzinger Rd.; 2 stories and basement, about 120x30 ft.; bids in.

Mo., St. Louis—D. W. Stinson, 7135A Amerherst Ave., erect brick residence, Cornell Ave.; 2 stories and basement, 35x33 ft., hardwood floors, copper sheet metal, slate roof, tile bath, shower, hot water heat; Chas. R. Greene, Archt., Wainwright Bldg.; drawing plans.

N. C., Charlotte—N. O. McDowell, Royal Court, plans 40 to 60 dwellings; \$4700 to \$5700 each.

Tenn., Franklin—Midland Development Co., Inc., plans number dwellings, Allendale; Emmons H. Woolwine, Archt.

Tex., Houston—W. L. Edmundson, Jr., Second Natl. Bank Bldg., erect 8 brick veneer dwellings, 405-17 and 5222 Pease St. and 2214-18 Craigmont St.; 5 and 6 rooms, \$15,000.

Tex., Lockhart—R. F. Leyendecker erect Spanish type frame and stucco residence; 1 story, wood and tile floors, 7 rooms; Jeremiah Schmidt, Archt., New Braunfels.

Tex., San Antonio—H. C. Rehberg, care Beverly W. Spillman & Beverly W. Spillman, Jr., Archts., San Jacinto Bldg., erect brick veneer residence, Sherwood Drive, Los Angeles Heights; 1 story and basement, about 40x40 ft., hardwood floors, asbestos shingle roof, 2-car garage and servants' quarters; plans ready about Aug. 15.

Government and State

Ark., El Dorado—Additional contractors estimating on \$450,000 post office and court house (except elevators), bids Aug. 28 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.; S. & W. Construction Co., Shrine Bldg., Memphis, Tenn.; Wm. MacDonald Construction Co., Syndicate Trust Bldg.; Murch Bros. Construction Co.; A. M. Lundberg, both St. Louis, Mo.; Newport Contracting & Engineering Co., Lee Hall, Va.; Geo. E. Wyne, 2539 Pennsylvania Ave., N. W., Washington; J. W. Van Horn, 526 S. Kenosha St., Tulsa, Okla.; R. F. Ball Construction Co., 806 1/2 Taylor St.; James T. Taylor, First Natl. Bank Bldg., both Fort Worth, Tex.; Ashton-Glassell Co., 260 Cadillac St., Shreveport, La.; Yeager & Sons, Danville, Ill.; Virginia Engineering Co., Inc., First Natl. Bank Bldg., Newport News, Va.; J. M. Raymond Construction Co., Hildebrandt Bldg., Jacksonville, Fla.; W. D. Lovell, Minneapolis, Minn.; Kellogg & Anderson, Taylor, Tex.; Ring Construction Co., Wesley Bldg., Minneapolis, Minn.; McGough Bros., 1945 Jefferson Ave., St. Paul, Minn.; Hallbauer-LaBahn, Inc., 844 Rush St., Chicago, Ill. 8-7

Florida—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., reported, requested bids for site for post offices at Lake Wales, New Smyrna, Stuart, Winter Haven, Leesburg, Eustis, Melbourne, Quincy, Winter Park, Arcadia and Plant City.

Ga., Atlanta—State Highway Bd., Capt. J. W. Barnett, Chmn., erect \$110,000 office and laboratory bldg., Capitol Ave. and Capitol Square; brick and tile, rein. conc., L shape, 2 stories and basement, comp. roof; A. Ten Eyck Brown, Archt., Forsyth Bldg.; S. B. Slack, Engr., care owner.

Ga., Fort Benning—Constructing Quartermaster, Lieut. W. M. Allison, has low bid at \$52,300 from Batson-Cook Co., West Point, Ga., for dispensary. 8-7

Ga., Savannah—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives supplemental bids Aug. 18 for remodeling and enlarging post office; \$900,000. 8-7

La., New Orleans—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., has low bid at \$258,800 from Batson-Cook Co., West Point, Ga., for quarantine station; brick, stone trim, 1 and 2 stories and basement. 7-31

Mo., Sedalia—Following contractors estimating on \$170,000 post office, bids Aug. 18 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.; Geo. E. Wyne, 2539 Pennsylvania Ave., N. W.; W. F. Jackson Co., Denrike Bldg., both Washington; J. W. Van Horn, 526 S. Kenosha Ave., Oklahoma City, Okla.; Newport Contracting & Engineering Co., Lee Hall, Va.; Walter Petersen, Omaha, Neb.; T. H. Johnson, 522 North Texas Bldg., Dallas, Tex.; Wm. MacDonald Construction Co., Synd. Tr. Bldg.; Hiram Lloyd Building & Construction Co., Synd. Tr. Bldg.; A. M. Lundberg, all St. Louis, Mo.; Ring Construction Co., Wesley Bldg.; W. D. Lovell; Fred R. Comb Co., all Minneapolis, Minn.; DeVault & Deitrich, Inc., Vassillon Rd., Canton, O.; Dean & Hancock, Citizens Natl. Bk. Bldg., Sedalia, Mo.; Anderson Construction Co., 619 S. Main St., Council Bluffs, Iowa; Yeager & Sons, Danville, Ill.; Kellogg & Anderson, Taylor, Tex.; John L. Soderberg Construction Co., Omaha, Neb.; O. L. Allen, Springfield, Mo.; James I. Barnes, Logansport, Ind. 7-31

Okl., Ponca City—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives bids Aug. 22 for site for \$250,000 post office.

Okl., Sapulpa—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives bids Aug. 12 for site for \$150,000 post office.

Tex., Brownsville—Constructing Quartermaster, Fort Brown, remodel bldgs.; \$300,000.

Tex., Randolph Field, Schertz—Constructing Quartermaster, Capt. A. W. Parker, receives bids Sept. 3 for gas distribution system, Randolph Field; \$311 lin. ft. 6-in.; 3147 lin. ft. 4-in. 8196 lin. ft. 3-in.; 5119 lin. ft. 2-in.; 39,000 lin. ft. 1½-in.; 145 valves and boxes; 79 pipe couplings; 450 1-in. tees, etc. 8-7

Tex., Randolph Field, Schertz—Constructing Quartermaster, Capt. A. W. Parker, receives bids Aug. 19 (extended date) for storm sewer system, Randolph Field. 7-24

Tex., Randolph Field, Schertz—Constructing Quartermaster, Capt. A. W. Parker, has (1) low bid at \$53,280 from Brennan Co., Dallas, for officers' mess hall; (2) low bid at \$55,167 from West & Jensen, Houston, for post exchange; (3) at \$9750 from Brennan Co. for bakery; (1) Harvey P. Smith, Archt., Natl. Bank of Commerce Bldg.; Lilly & Drought, Engrs., Frost Bldg., both San Antonio; (2) Robt. B. Kelly, Archt., Millam Bldg.; Matthews & Kenan, Engrs., Smith-Young Tower, both San Antonio. 7-17

Hospitals, Sanitariums, Etc.

Fla., Panama City—Dr. J. M. Whitfield, Harrison Ave., erect 30-bed hospital; brick, 1 story and basement, 40x75 ft., conc. footings, comp. roof; Lauren Parrott, Archt., Fitzgerald, Ga.

Md., Baltimore—Board of Awards, City Hall, has low bid at \$674,500 from North-Eastern Construction Co. for nurses' home, City Hospitals; Palmer & Landin, Archts., 513 N. Charles St. 7-24

Miss., Hattiesburg—Supreme Grand Lodge, Afro-American Sons & Daughters, Dr. L. T. Miller, Pres., Yazoo City, may erect hospital.

Mo., Springfield—Springfield Baptist Hospital has completed plans by Geo. F. Reed, Archt., Woodruff Bldg., for 1-story brick office addition to hospital; ready for bids.

Mo., St. Louis—St. Louis University, Rev. Alphonse J. Schmitt, Dean of School of Medicine, has plans complete for \$1,250,000 Firmin Desloge Memorial Hospital; work start early in Fall; structure: French Gothic type, 13 stories, 250 ft. high, brick and stone, stone entrance porch, Italian travertine lobby; \$100,000 bldg. to accommodate 60 sisters; service bldg.; Arthur J. Widmer & Associates, Inc., and Study & Farrar, Asso. Archts. 6-75

N. C., Elizabeth City—City may purchase Albemarle Hospital and expend \$15,000 for improvements; \$35,000 available, \$37,500 to come from Duke Foundation provided additional \$15,000 is raised.

N. C., Gastonia—North Carolina Orthopaedic Hospital, R. B. Babington, Pres., receives bids Aug. 14 for Benjamin N. Duke Memorial Ward; \$25,000, 50 beds; plans from Hugh E. White, Archt., Third Trust Building. 7-31

Tenn., Bolivar—State, Richard H. Lyle, Commr. of Institutions, Nashville, reported, receives bids Aug. 11 for addition, Western State Hospital for Insane; brick, stone and rein. conc., 3 stories and basement, \$300,000; Wyatt C. Hedrick, Inc., Archt., First Natl. Bk. Bldg., Fort Worth, Tex., and Sterick Bldg., Memphis, Tenn. 6-26

Tex., San Antonio—State Bd. of Control, Claude D. Teer, Chmn., Austin, erect \$20,000 dwelling, San Antonio State Hospital; fireproof, face brick and tile, 2 stories, 38x90 ft., 4 baths; Leo M. J. Diemann, Archt., 306 E. Commerce St., San Antonio; sketches. 8-7

Tex., San Antonio—Woodmen of the World, W. A. Fraser, Pres., Omaha, Neb., will receive bids Aug. 18 at office Phelps & DeWees, Archts., Gunter Bldg., San Antonio, for chapel, W. O. W. Hospital grounds; Gothic type, rein. conc. and stone, carillon tower. 8-7

Va., Richmond—Stuart Circle Hospital receives bids Aug. 21 (extended date) for \$100,000 nurses' home; gray brick, 4 stories, 80x90 ft., conc. and linoleum floors, comp. roof; Chas. M. Robinson, Inc., Archts., Times-Dispatch Bldg. 7-31

Va., Richmond—Grace Hospital; \$75,000 annex; Baskerville & Lambert, Archts., Central Natl. Bk. Bldg., advise contract not let, as lately reported. 8-7

Hotels and Apartments

Ark., Newport—W. H. Towze, care Arkansas Power & Light Co., and John E. Williams, reported, planning erection of 6-story, 72-room hotel; McAninch & Petter, Archts., Pyramid Life Bldg., Little Rock.

Ga., Atlanta—G. L. Crandall, 254 Peachtree St., N. E., erect \$30,000, brick, stone trim 14-apartment, 206 Eleventh St., N. E.; comp. roof, hardwood and tile floors.

La., Shreveport—Dr. R. D. Tilly, Commercial Bk. Bldg., complete 2-story, 18-apartment, College St. near Centenary Blvd.

Md., Elkton—New Central Hotel remodel Lipman Bldg. on E. Main St., for annex.

Mo., Columbia—James and Narcissus B. Butler remodel 3-story and basement, 42x88 ft. brick apartment, 1314-16 Anthony St.; \$20,000, 18 units, new front, new floors, tile baths, electric refrigeration; also remodel 2-story and basement residence, 1318 Anthony St., for apartments; \$5000; Geo. R. Bartling, Inc., Archt., Paul Brown Bldg., St. Louis, superintends work and sublets all work.

N. C., Greensboro—Clive Center Corp., Charles L. Van Noppen, Pres., plans to start work in November on 8-story Hotel Van Noppen, W. Gaston and Eugene Sts.; 150 rooms, playgrounds, golf, tennis, bowling gardens; total cost \$600,000; Charles C. Hartmann, Archt., Jefferson Bldg.

Tenn., Memphis—J. J. Wade, Union Planters Bank Bldg., reported, having plans prepared by J. J. Broadwell, Sterick Bldg., for \$300,000, 7-story, brick and rein. conc. apartment hotel, Central Ave. and Melrose St.; hardwood floors, comp. built-up roof.

Tenn., Memphis—C. W. Holsington, care W. C. Lester, Archt., Derron Bldg., reported, having plans prepared for \$800,000, 12-story, brick and rein. conc., 353-apartment hotel, Orleans and Jefferson Ave.; built-up comp. roof, hardwood floors.

Tex., Beeville—R. C. Cooper erect 2-story, tile and stucco, 16-apartment; Leo M. J. Diemann, Archt., 306 E. Commerce St., San Antonio.

Miscellaneous

Ark., Fayetteville—Mt. Sequoyah M. E. Assembly, T. L. Hart, Treas., erect 3-story, brick building; E. R. Ratliff, Archt., superintend work. 12-19-29

Ark., Sulphur Springs—Dr. C. W. Alexander, Sulphur Springs, and 1512 N. Fifth St., Kansas City, Mo., reported, started work on main building, offices, cottages, swimming pool and dance pavilion; total cost \$200,000.

Fla., Hawthorne—Log Cabin Lodge, Inc., L. Y. Myer, Pres., plans to start work Sept. on 30 log cabins; \$30,000.

La., Lafayette—Sisters of Mt. Carmel receive bids Aug. 21 for 2-story, 40x100-ft., brick residence; contain community room, chapel, refectory, 16 bedrooms; comp. roof, wood and tile floors; following contractors estimating: J. B. Mouton, Lafayette; P. Olivier & Son, 114 Bilbo St., Lake Charles; A. C. Stewart, 810 E. Boulevard; L. W. Eaton, 1601 N. Boulevard, both Baton Rouge; E. E. Rabalais & Son, Bunkie; Wm. T. Nolan, Archt., Canal Bank Bldg., New Orleans.

Mo., St. Louis—Ambruster Undertaking Co., Robt. J. Ambruster, 4468 Washington Bldg., ready for bids for \$100,000, 2-story and basement, 60x90 ft., stone and terra cotta masonry, 6633 Clayton Road; stone foundation, slate roof, hardwood floors; F. G. Avis, Archt., 1021 Big Bend Blvd.

Tex., Houston—Forum Cafeterias of America, Inc., C. M. Hayman, Pres., 1222 Grand Ave., Kansas City, Mo., leased first floor and basement, 55x125 ft., of Bender Hotel, Main St. and Walker Ave.; expend \$275,000 for improvements for cafeteria; first floor to have balcony, both to have cement floors covered with linoleum; tile or marble in aisle; ornate chromium plated metal on railing; walls will be finished in vitrolite and decorative mirrors; ornate plaster ceiling; woodwork, chairs and tables of walnut; terra cotta or marble front; service counter will be thermotainer made by Waters-Genter Co., Minneapolis; electrically equipped kitchen; ventilating and air cooling system; Crescent Electrical dishwashers; steel lockers in boys' and girls' rest room, terrazzo floor in basement; G. B. Franklin, Archt., 1222 Grand Ave., Kansas City. 8-7

Tex., San Antonio—City Federation of Women's Club, Mrs. W. E. Pyne, Pres., 301 Hearn St., sponsoring erection of \$500,000, 15-story Swiss Plaza Club, Avenue A at Seventh St.

Schools

Ark., Daisy—Daisy School Dist. Trustees erect school; G. C. Bollin, Supt., Pike County School Bd., Murfreesboro; plans by C. M. Hirst, State Dept. of Education, Little Rock.

Ark., Fayetteville—Kappa Gamma Sorority erect sorority house, Leverett and Douglas Sts.

Ark., Harrison—Hopewell Special School Dist., W. E. Halbrook, Boone County Supt. of Education, erect \$10,000, 1-story, brick school.

Ark., Little Rock—Arkansas Training School for Girls, Ben D. Brickhouse, Chmn., Bd. of Trustees, Rector Bldg., erect fireproof dormitory to replace recently burned structure.

Ark., Magnolia—Walkerville Special School Dist., F. N. Powell, Supt., Columbia County School Bd., erect \$15,000, 1-story, brick, 6-room school.

Ark., Prairie Grove—Washington County Bd. of Education, O. M. Bass, Supt., Fayetteville, erect addition and remodel school; 2 stories, brick, \$17,000; plans by State Dept. of Education, Little Rock.

Ark., West Fork—Washington County Bd. of Education, O. W. Bass, Supt., Fayetteville, erect \$25,000 school; plans by State Dept. of Education, Little Rock.

D. C., Washington—George Washington University has permit for \$15,000 1-story, brick and cement block educational building, 2026 H St., N. W.

Fla., Ocala—American Missionary Society, New York, soon let contract for 100x100 ft., hollow tile and stucco building at Fessenden Academy on Dixie Highway; tile roof, hardwood, steam heat; W. T. Courtney, Constr. Supt. of Lincoln Academy, King Mountain, N. C., in charge.

Ga., Albany—Georgia Normal & Agricultural College soon ready for bids for 1-story and basement, 42x84 ft., brick dining hall; hardwood and cement floors; Daniell & Beutell, Archts., Georgia Savings Bank Bldg.

Ga., Americus—Anthony School Dist. Bd. of Trustees, W. L. Dupree, Chmn., erect school; \$15,000 bonds voted.

Ga., Camilla—Bd. of Education ready for bids by Sept. 1 for \$85,000, 1-story and basement, 295x170 ft., brick, hollow tile, steel, stone trim school; 24 classrooms, auditorium and gymnasium, comp. roof, conc. and wood floors, steam heat; Lloyd Greer, Archt., S. Patterson St., Valdosta. 6-20

Ga., Thomasville—City, D. Roy Hay, Mayor, votes Sept. 24 on \$125,000 bonds for high school; 2 stories and basement, rein. conc. and brick, comp. roof, stone trim; Lockwood & Poundstone, Archts., Marietta Bldg., Atlanta. 7-31

La., Chatham—Jackson Parish School Bd., W. C. McClendon, Supt., Jonesboro, receives bids Sept. 4 for \$40,000, 2-story, brick, 9-classroom school; Seymour Van Os, Merchants Bank Bldg., Shreveport, and George F. Lomax, James Bldg., Ruston, Asso. Archts. 7-24

La., Tickfaw—Tangipahoa Parish School Bd., Amite, erect \$20,000, 1-story, 93x93 ft., brick veneer, 6-classroom and auditorium school; comp. roof; Favrot & Livaudais, Archts., Hibernia Bank Bldg., New Orleans.

Md., Rising Sun—Cecil County School Bd., Elkton, plans high school.

Miss., Arcola—Arcola Consolidated Dist. School Trustees, W. L. Beard, Pres., Greenville, receive bids Aug. 26 for improvements to school and heating system; J. M. Spain, Archt., New Merchants Bank Bldg., Jackson.

Miss., Lexington—Coxburg Consolidated School Dist. defeated \$20,000 bonds for erecting repairing school and teachers' home. 7-31

Miss., Moorhead—Bd. of Trustees, Sunflower Humphreys-Leflore Junior College, selected Frank R. McGeay, Sr., Greenwood, to prepare plans for building.

Miss., Tchula—Tchula Special School Dist. voted \$30,000 bonds for annex to school. 7-17

Mo., Ferguson—Bd. of Education ready for bids for brick and rein. conc., fireproof school; Wm. B. Ittner, Inc., Archt., Continental Life Bldg., St. Louis.

Mo., Jefferson City—Lincoln University ready for bids for \$250,000 administration building; Wm. B. Ittner, Inc., Archt., Continental Life Bldg., St. Louis. 2-27

Mo., Kewanee—Bd. of Education, Fred Hetledge, Pres., ready for bids for 1-story and basement, 51x61 ft., brick, 4-classroom school; comp. roof; Bonsack & Pearce, Archts., 411 Olive St., St. Louis.

Mo., Springfield—Bd. of Education, A. R. Stewart, Sec., has low bid at \$75,833 from F. E. Crites, 3017 E. 20th St., Kansas City, for 2-and 3-story, 155x86 ft., brick, stone and rein. conc., fireproof Lincoln School; Earl Hawkins, Archt., McDaniel Bldg., Springfield. 7-17

Mo., Newtonia—Consolidated Newton County Dist. No. 9 erect \$10,000 school, gift of Barton Skaggs, Pres., Safeway Stores, Inc.

N. C., Mount Airy—Surry County Bd. of Education, E. S. Hendren, Supt., erect schools at Mount Airy, Siloam, Green Hill, Bannertown and Cooke; \$72,000; one story, 133x86 ft., brick and tile, asbestos shingle and built-up roofs; oak floors; D. N. Cooke, Archt.; Mount Airy; bids in. See Want Section—Building Material and Equipment.

N. C., Pinnacle—Stokes County Bd. of Education, Danbury, receives bids Sept. 15 for 6-room brick addition to school.

N. C., Winston-Salem—Bd. of Education, reported, has plans by Harold Macklin, Realty Bldg., for \$500,000, 3-story and basement, brick, conc. and steel high school; W. R. McCormack, Asso. Archt., 10006 Carnegie Ave., Cleveland, Ohio.

Okl., Stillwater—Oklahoma Agricultural and Mechanical College, Dr. Henry G. Bennett, Pres., plans to start work soon on \$22,000 addition to cattle barn.

S. C., Travelers Rest—Travelers Rest Consolidated High School Dist. votes Aug. 19 on \$30,000 bonds for school; James F. Whatley, Greenville County Supt. of Education, Greenville; F. H. & J. G. Cunningham, Archts., 201-A E. Coffee St., Greenville. 7-31

Tenn., Johnson City—State Bd. of Education, P. L. Harned, Chmn., Nashville, has low bid from Rogers & Leventhal, 822 E. 11th St., Chattanooga, for \$175,000, 2-story and basement, brick, tile, rein. conc. and struc. steel library; stone trim; Colie & Cardwell, Archts., Kress Bldg., Johnson City. 7-31

Tenn., Ooltewah—Hamilton County Bd. of Education, Jas. A. Cash, Commr., Chattanooga, has low bid at \$53,800 from Selman-O'Brien Co., 670 Georgia Avenue, Chattanooga, but delayed awarding contract until Aug. 26 for \$45,000, 1-story and basement, brick, stone trim school; comp. roof, 16 rooms, auditorium-gymnasium and cafeteria; W. H. Sears, James Bldg., and P. B. Shepherd, 208 Windmere Drive, both Chattanooga, Archts. 5-22

Tenn., Nashville—State Bd. of Education, reported, having sketches prepared by W. R. McCormack, 10006 Carnegie Ave., Cleveland, Ohio, for \$1,000,000, conc., steel and stone industrial college.

Tex., Donna—Bd. of Education plans \$200,000, 2 or 3-story, rein. conc. and brick high school.

Tex., Mauriceville—Mauriceville Ind. School Dist. Bd. of Trustees, W. N. Wilkinson, Sec., erect \$40,000, brick, 6-room and auditorium school; Livesay & Wiedemann, Archts., San Jacinto Life Bldg., Beaumont; bids in. 7-24

Tex., Beeville—Beeville Ind. School Dist. votes soon on bonds for school improvements; John R. Beasley, Pres., Bd. of Trustees.

Tex., El Paso—El Paso County Bd. of Education erect \$30,000, 4-room addition to White Spur School; Trost & Trost, Archts., Two Republics Bldg.; bids in.

Tex., Kingsville—San Fernando Common School Dist. No. 5 receives bids Aug. 21 at office Gus L. Kowalski, Kingsville, for 1-story, brick and rein. conc., 3-room school near Kingsville; John M. Marriott, Archt., Frost Natl. Bank Bldg., San Antonio.

Tex., Kerrville—Shreiner Institute, Dr. J. J. Delaney, Pres., erect building to house chemistry and zoology laboratories. Recently incorrectly reported at Tex., Houston. 7-17

Tex., Mont Belvieu—Barbers Hill Ind. Dist. School Trustees receive bids Aug. 20 for 1-story, brick, stone and rein. conc. high school; gymnasium, auditorium, library, commercial dept., home economics dept., science laboratories; \$100,000 bonds voted for site, building and equipment; Harry D. Payne, Archt., Kirby Bldg., Houston. 7-31

Tex., Port Arthur—School Bd., L. B. Abbey, Sec., receives bids Aug. 16 for 8-room, brick, hollow tile and stucco addition to Lamar School; Mark Lemmon, Archt., Constr. Industries Bldg., Dallas.

Va., Hopewell—St. James Catholic Church, Rev. Father Gacquin, Rector, erect \$30,000 parochial school and \$18,000 home for Sisters; brick.

Va., Petersburg—State Bd. of Education, Richmond, reported, having sketches prepared by W. R. McCormack, 10006 Carnegie Ave., Cleveland, Ohio, for \$1,000,000, 3-story and basement, brick, conc. and steel industrial college.

W. Va., Mason—Mason, Wagner and Hartford School Dist. erect \$40,000 high school; Levi Dean, Archt., 2748 Guyan Ave., Huntington.

Stores

Ark., Fayetteville—Bates Bros. erect \$10,000, 1-story, brick building.

D. C., Washington—Rudolph & West, 1331 New York Ave., have permit for \$70,000, 4-story, steel, brick and conc. store to replace recently burned structure; Samuel J. Prescott Co., Inc., Contr., 814-13th St., N. W.; Frederic B. Pyle, Archt., Evans Bldg. 6-26

Fla., Miami—Flagler Street Co., Venetian Bldg., remodel store, 62 E. Flagler St.; \$10,000.

Ga., Milledgeville—L. H. Jordan erect 2-story brick store.

La., New Orleans—Maple Realty Co. received bids Aug. 15 for 1-story, 60x57 ft., stucco store, Maple and Adams Sts.; comp. roof; Theo. L. Perrier, Archt., Maritime Bldg.

La., New Orleans—Singer Sewing Machine Co., 1018 Canal St., receives bids Aug. 28, at office Favrot & Livaudais, Archts., Hibernia Bank Bldg., for \$85,000, 3-story, 28x120 ft., brick, limestone trim store, 936 Canal St.; following contractors estimating: Genry-Oakes Co., Queen & Crescent Bldg.; Geo. J. Glover Co., Inc., Whitney Bank Bldg.; O. M. Gwin Construction Co., 3503 Fern St.; Lionel F. Favrot, Louisiana Bldg.; Gervis F. Favrot, Walter Bldg.; H. Pratt Farnsworth, Canal Bank Bldg. 7-24

La., Opelousas—Alexander Watkins receives bids Aug. 18 for 1-story, 40x90 ft., brick double store; comp. roof, tile floors; Wm. T. Nolan, Archt., Canal Bank Bldg., New Orleans. 8-7

Tenn., Franklin—M. T. Carlisle, Boston Store, plans to rebuild structure recently burned.

Tex., Dallas—Yonack Brothers, Central Bk. Bldg., have permit for \$20,000, 3-story, brick store and hotel, 600-02 Commerce St.

Tex., Fort Worth—Mrs. C. E. Combs soon let contract for \$10,000, 2-story, 50x50 ft., brick and rein. conc. building; Ervin & Godwin, Archts., Dan Waggoner Bldg.; J. W. Nichols Produce Co., Lessee, 719 N. Main St.

Tex., Houston—O. I. Graff, Houston, and Granville Graff, St. Louis, rebuild two buildings, Holman and La Branch Sts., containing Alameda Apartments, Alameda Barber Shop, Riverside Cleaners & Dyers, macy, A. Meschkat's Bakery, University Quality Shoe Shop and others; noted burned at loss \$50,000.

Tex., Houston—Sunland Furniture Co., 3016 Main St., has permit for \$25,000 store, 2816 Main St.

Tex., Houston—McCrorry Stores Corp., 1107 Broadway, New York, plans to start work by Oct. on \$250,000, 3-story and basement building, 507 Main St.; R. C. Ziessler, Constr. Supt. for company.

Theatres

Ark., Manila—C. W. Tipton plans brick theater on Main St.

Ga., Brunswick—Community Theatre Enterprises remodel interior and exterior of Ritz Theater.

Tex., Victoria—Rubin Frels having plans prepared by Stanley W. Bliss, Harlingen, for brick, rein. conc. and steel theatre. 7-17

Warehouses

Ala., Montgomery—H. L. Foshee, 212 Tallapoosa St., has permit for \$10,000, 1-story brick warehouse, 745 N. McDonough St.

Tex., Houston—Southern Engine & Pump Co., C. A. Leavens, Pres., 615 Washington Ave., plans office and warehouse, Walker Ave. and St. Charles Sts.

BUILDING CONTRACTS AWARDED

Association and Fraternal

Ga., Macon—Al Shihah Temple Corp., Bruce C. Jones, Pres., Citizens & Southern Bank Bldg., let contract to Chess W. Jones & Son, Grand Bldg., for \$75,000 Shrine Temple; rein. conc., brick and tile, struct. steel; W. Elliott Dunwoody, Archt., 460 Mulberry St., Macon; Jos. S. Shaw, Engr., Georgia Sav. Bk. Bldg., Atlanta. 7-31

Bank and Office

Tex., Eagle Pass—First National Bank, Geo. Hollis, Pres., let contract at \$26,594 to Blythe & Duerson, Eagle Pass, for remodeling and addition; vault doors, Herring-Hall-Marvin Safe & Lock Co., Hamilton, O., at \$5975; fixtures, Mallander & Co., 607 Jackson Ave., Waco, Tex., at \$13,465; brick, conc. and steel, 2 stories, 50x100 ft., terrace and tiletex floors, 4-ply built-up roof; Paul G. Silber & Co., Archts., Bedell Bldg.; Matthews & Kenan, Engrs., Smith-Young Tower, both San Antonio, Tex. 7-17

Va., Rich Creek—Farmers & Mechanics Bank, W. O. Woodson, Pres., started work on brick bldg.; equipment.

Churches

Mo., St. Louis—German Evangelical Trinity Church, 4700 S. Grand Ave., erect \$51,000 bldg.; brick, 58x100 ft., slate roof, hot air heat; Y. Haeger, Archt., 3844 Utah Place; G. Moeller Construction Co., Contr., 3520 Itaska St.

Tenn., Memphis—Buntyn Methodist Church, C. B. Procter, Chmn., Bldg. Comm., 3550 Mynders Ave., let contract to E. J. Pearson, Fidelity Bk. Bldg., for \$150,000 church and Sunday school; plumbing, McGowan Plumbing Co., 542 Vance Ave.; heating, Bluff City Heating Co., 864 N. Willett St.; wiring, Fowler Electric Co., 118 Monroe Ave.; brick, stone trim, 3 stories, 112x155 ft.; auditorium seat 650; 25 to 30 classrooms; Hubert T. McGee and Erwin Phillips, Asso. Archts., both Fidelity Bk. Bldg. 7-31

Tenn., Old Hickory—Baptist Church completed excavation for \$45,000 bldg.; face brick, 2 stories and basement, 76x113 ft., common brick donated.

Tex., Fort Worth—San Jose R. C. Church erecting \$16,000 chapel after plans by Wyatt C. Hedrick, Inc., First Natl. Bk. Bldg.; brick, inner walls tile faced, 1 story, 46x80 ft.; Frank Firman, Contr., 2801 Meadowbrook Drive. 7-17

Tex., Yorktown—St. Pauls Lutheran Church let contract to H. J. von Rosenberg, N. Alamo St., San Antonio, for \$60,000 bldg.;

semi-fireproof, brick and rein. conc., 2 stories, 48x112 ft., pine and cement floors, rein. conc. foundation, tin roof; Marvin Eickenroht & Bartlett Cocke, Archts., Maverick Bldg.; Beretta-Stiles Co., Inc., Natl. Bank of Commerce Bldg., both San Antonio. 7-31

City and County

Ark., DeQueen—Sevier County Bd. of Commrs. started work on \$110,000 courthouse and jail; fireproof, conc. floors, built-up roof; Witt, Seibert & Halsey, Archts.-Engrs.; Hardy Bros. Construction Co., Contr., both Texarkana, Ark.-Tex. 7-31

Dwellings

Ala., Birmingham—Margaret Hunt Ruff, 538 Broadway, Edgewood, erect brick veneer, stucco and half-timber residence by day labor; 1 story, comp. roof, furnace; Edw. D. Slater, Archt., Martin Bldg.

Ark., Little Rock—E. E. Holcomb erect English Cotswold type cottage, 133 Pearl St.; red brick, 1 story, 7 rooms; Erhardt & Eichenbaum, Archts., 113½ W. Third St.; Seth Wagner Co., Contr., 213 W. Second St.

Ark., Rogers—J. W. Robinson erect 2 frame dwellings; 1 story and basement, 28x32 ft., shingle roofs, gas heat; J. D. Reeves, Contr.

D. C., Washington—L. E. Breuninger & Sons, Investment Bldg., have permit for dwelling, 7611 Fourteenth St., N. W.; brick, 2½ stories, \$10,000; owners build.

D. C., Washington—Edson W. Briggs Co. let contract to Allen J. Saville, Inc., for brick and stone dwelling, 1733 Kalmia Rd., \$24,000; brick, 2 stories; E. W. Cappleman, Archt., all Electric Bldg., Richmond, Va. 6-12 basement, 18 major rooms, hardwood and tile Archt. 5-29

Fla., Maitland—E. S. Fownes, Clark Bldg., Pittsburgh, Pa., erecting Colonial residence, guest house and garage; \$43,000.

Fla., Vero Beach—Robt. C. Rathbone, 80 Malden Lane, New York, and Englewood, N. J., has permit for \$50,000 Spanish type residence, Riomar; John N. Bullen, Archt., Exchange Bldg.; Gunn & Goll, Contrs., Security Bldg., both Miami; D. F. McDonald, Supt., Vero Beach; landscaping in chg. of Mayor Alex McWilliams, Vero Beach.

Ga., Augusta—H. A. Fortson, care Southern Finance Corp., S. F. C. Bldg., let contract to J. B. Mobley, P. O. Box 691, for stone, stucco and half-timber residence; 1 story, 30x60 ft., oak floors, comp. shingle roof; A. Brian Merry, Archt., S. F. C. Bldg. 8-7

Ga., Atlanta—Chas. L. Chosewood, Jr., 694 Confederate Ave., S. E., erect 10 duplexes, Pryor St. and Boykin Ave., S. E.; 1 story and basement, pine floors, comp. shingle roof; \$35,000; owner builds.

Ga., Red Oak—E. P. Lofton, Box 464, Dayton, O., erect \$40,000 residence; stucco and tile, hardwood floors, tile roof, conc. foundation, steam heat; E. K. Lofton, Archt., 10 Ferris St., Detroit, Mich.; owner builds.

La., Baton Rouge—Dr. L. F. Lorio, 1033 Camella Ave., erect \$20,000 residence, Dreber Ave. and Myrtle Walk; brick, 2 stories and basement, 40x53 ft.; C. W. Welborn, Archt., Old Reymond Bldg.; L. W. Eaton, Contr., 1601 North Boulevard.

La., New Orleans—O. F. Harang, 6008 Catina St., erect dwelling, Franklin Ave. near Abundance St.

La., New Orleans—Geo. E. Burgess, 3830 Bienville St., erect duplex, Bienville St. near N. Scott St.; asbestos roof, sheet metal, orna. iron, tile work; B. A. Russ, Contr., 4 Paladin Place, Metairie.

La., New Orleans—Mrs. Cora B. Crisler, 1866 Gentilly Road, erect 2 duplexes, 1848-46 Gentilly Blvd.; asbestos roof, tile work, orna. iron; Philip Schneller, Contr., 4141 Orleans St.

La., Sellers—E. A. Rossi, 318 Brockenbraugh Court, has contract for residence; brick, asbestos roof.

Md., Baltimore—John M. Spence, 350 N. Holiday St., erect \$10,000 brick residence and garage, 214 Upnor Rd., Homeland; Howard F. Baldwin, Archt., 328 N. Charles St.; Jas. L. Hooper, Contr., 5533 Gwynn Oak Ave.

Md., Baltimore—Ralph C. Talbott, 816 American Bldg., let contract to A. J. Boschert, Fullerton Ave., Raseburg, for 9 bungalows, 3011-27 Chesley Ave.; conc. block, 1½ stories, 28x43 ft., hardwood floors, conc. and conc. block foundation, asphalt roofs, \$4500 each; plans by Mr. Boschert. See Want Section—Building Material and Equipment. 8-7

Mo., Springfield—Paul Sunderland, 446 E. Grand Ave., let contract for \$20,000 residence, Hawthorne and Kentwood Sts., to R. O. Aton, 984 S. Jefferson St.; brick, stucco, half timber and limestone, 2 stories and basement, 27x62 ft. with 15x18-ft. wing; Eugene F. Johnson, Archt., McDaniel Bldg. 3-20

Mo., St. Louis—A. F. Laube, 4216 Holly Ave., erect \$10,000 residence, 8606 Drury Lane; brick, 1 story and basement, 35x40 ft., hardwood floors, tile bath, asphalt shingle roof, hot air heat; J. C. Greulich, Contr., 3111 N. Grand Blvd.

Mo., St. Louis—Bush Burns Realty Co. erect 6 brick dwellings, 5517-33 Rosa Ave.; 1 story and basement, 26x42 ft., tile bath, hardwood floors, comp. roof, hot air heat; Garrison & Bradley Construction Co., Contr., both 712 Chestnut St.

Mo., St. Louis—C. R. Appel, 1600 Big Bend Rd., erect 2 brick dwellings and garages, 5626-32 Itaska St.; 28x35 ft., and 18x18 ft.; \$11,000; plans and constr. by owner.

Mo., St. Louis—W. H. Cobb, 4255 Margareta St., erect \$10,000 brick residence, 4200 W. San Francisco St.; 1 story and basement, 26x43 ft., asbestos shingle roof, tile bath, hardwood floors, hot water heat; J. Chas. Mueller & Son, Contr., 3528 Hebert St.

Mo., St. Louis—W. J. & D. Fricke, 2767 Bacon St., erect \$10,000 residence, 6581 Oleatha Ave.; brick, 2 stories and basement, 28x47 ft., hardwood floors, tile bath, comp. shingle roof, hot air heat; Julius E. Tarling, Archt., 2806 N. Grand Blvd.; Arthur Ochs, Contr., 5435 Janet Ave.

Mo., St. Louis—C. G. Joplin, 6535 Delmar Blvd., erect \$12,000 residence, 7428 Buckingham St., Moorlands; brick, 1½ stories and basement, hardwood floors, tile bath, slate roof, hot water heat; O. J. Popp, Archt., Arcade Bldg.; work by sub-contract.

Mo., St. Louis—Dr. John A. Lotz, 2323 Union Ave., erect \$11,500 residence, Country Club Addition No. 2, Bel Nor; brick, 1½ stories and basement, 36x38 ft., hardwood floors, tile bath, hot air or hot water heat; Walter John Mohr, Contr., 2948 Clearview Ave.

Mo., St. Louis—E. Ballman, 1149 Center Drive, erect \$15,000 brick residence, 7408 Byron Place; 2 stories and basement, 42x30 ft., hardwood floors, slate roof, tile bath, probably hot water heat; Hiram Philips, Archt., 4162 Castleman Ave.; Henry Dilschneider Real Estate & Building Co., Contr., 714 Kingsbury Ave.

Mo., St. Louis—W. H. Hannibal, 3246A Delor St., erect \$10,000 residence, 4256 Margareta Ave.; brick, 1 story and basement, 26x48 ft., hardwood floors, tile bath, comp. shingle roof, hot water heat; J. A. Ditenhafer, Contr., 4221 San Francisco St.

Mo., St. Louis—Fred Peters, care Manchester Mfg. Co., 1210 S. Vandeventer Ave., started work on \$10,000 residence, Lackland and Fee Fee Roads; frame, 1½ stories and basement, 44x26 ft., hardwood floors, tile bath, comp. shingle roof.

Mo., St. Louis—Louis Mueller, R. R. No. 3, Clayton, started work on \$10,000 residence, Olive St. Rd.; brick, 1½ stories and basement, 34x38 ft., hardwood floors, tile bath, comp. shingle roof, probably hot air heat; A. E. Bauer, Contr., 6619 Julian Ave.

Mo., St. Louis—W. A. Beck, 7571 Hoover St., Richmond Heights, erect \$10,500 brick residence, 7415 Cromwell St.; 1½ stories and basement, 37x25 ft., hardwood floors, tile bath, asbestos shingle roof, hot water heat; work by sub-contract.

Mo., St. Louis—B. J. Noonan, 2407 N. Broadway, erect \$10,000 residence, 8762 Partridge Ave.; brick, 1 story and basement, 24x42 ft., hardwood floors, tile bath, comp. shingle roof, hot air heat; O. K. Investment Co., Contr., 8800 Kingshighway, N. W.

Mo., St. Louis—L. E. Eberhart, 5403 Quincy St., erect \$12,000 residence, 6718 Alexander St.; brick, 2 stories and basement, 28x30 ft., hardwood floors, tile bath, slate coated shingle roof, hot air heat; Henry Schaumburg, Archt., 3631 Connecticut St.; J. H. Bauman & Co., Contr., 2724 Sublette Ave.

Mo., Washington—W. O. Arcularius, care H. H. Buschmeyer, Contr., Washington, started work on \$15,000 residence; brick, 2 stories and basement, 30x40 ft.; Alex. B. Boyer & Harris Armstrong, Archts., Arcade Bldg., St. Louis.

Mo., Washington—Dr. F. G. Mays erect brick or stone residence, Fourth and Cedar Sts.; 2 stories and basement; Alex. B. Boyer & Harris Armstrong, Archts., Arcade Bldg., St. Louis; probably start work in Fall.

Mo., Webster Groves, St. Louis—C. W. Musick, 321 N. Elm St., erect \$10,000 frame residence, 220 Orchard Ave.; 2 stories and basement, 26x48 ft., hardwood floors, tile bath, comp. shingle roof, probably hot water heat; Joy Homes, Inc., Contr., 515 Summit Ave.

Okla., Tulsa—Hanna Lumber Co., 401 S. Peoria St., erect model dwelling, 19th St. and Evanston Ave.; stone.

S. C., Yemassee—H. P. Bingham, 39 Broadway, New York, erect hunting lodge, Cotton Hall plantation near Yemassee; 165x60 ft., central section and 2 wings, 2 stories and basement 18 major rooms, hardwood and tile floors; Russell & Clinton, Archts., 11 E. 44th St., New York; H. S. Burden, Supvg. Archt., Sumnerville, S. C.; Clarke & Clarke, Contr., 18 E. Bryan St., Savannah, Ga.; planting work, etc., by Development Co., Beaufort, S. C.

Tenn., Knoxville—John Watson, Central Park, erect \$15,000 Colonial residence, Holston Hills; brick, 2 stories, 7 rooms; J. M. Dunn & Son, Contr., 245 Broad St.

Tenn., Nashville—Thos. Kennedy, Woodlawn Drive, erect brick, stone and conc. residence; 1 story and basement, 37x67 ft.; Hart & Stone, Archts., Hitchcock Bldg.; Foster & Creighton Co., of Hirth and First Bk. Bldg., gen. contract at \$13,516.

Tenn., Nashville—C. T. Hawkins, 1136 Greenfield Ave., erect \$10,000 brick veneer residence, Lauderdale Rd.; 2 stories, 14 rooms, 2 tile baths, oak and pine floors, comp. shingle roof; owner builds.

Tex., Garwood—Wm. K. Lehrer let contract at \$24,947 to W. C. Thraillkill, Real Estate Bldg., San Antonio, for residence; Spanish type, 2 stories and basement, conc. foundation, rock walls, tile roof; Henry Steinbomer, Archt., Real Est. Bldg.

Tex., El Paso—Harry Hussman, Hussman Hotel, erect 4 duplexes, 3601-11 Sacramento St. and 3709-11 Frankfort St.; total \$17,500; J. C. Ferguson, Contr.

Tex., Lockhart—Allie Mohle let contract to W. C. Eads for Spanish type residence; frame and stucco, 1 story, 43x54 ft., 2 baths, hardwood and tile floors; Jeremiah Schmidt, Archt.

Government and State

D. C., Washington—J. C. Lombard Co., Inc., 1433 Newton St., N. W., has contract for plaster models for \$3,000,000 extensible bldg. for Dept. of Agriculture; Nelson-Pedley Construction Co., Contr., 1512 Chestnut St., Philadelphia, Pa. 7-24

Ky., Louisville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., let contract at \$15,944 to Henry Bickel Co., Inc., 435 Garden St., Louisville, to raze bldgs., preliminary excavation for and fence around site of \$2,000,000 post office, custom house and court house. 8-7

Tenn., Kingsport—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., let contract at \$111,900 to Beaman-Coleman Construction Co., Lawyers Bldg., Raleigh, N. C., for post office. 8-7

Tex., Randolph Field, Schertz—Constructing Quartermaster, Capt. A. W. Parker, let contract at \$59,900 to Harrison-Wright Co., 4 W. Third St., Chicago, Ill., for underground elec. system, Randolph Field. 7-31

Hospitals, Sanitariums, Etc.

Ala., Gadsden—Mason & Dutton, 3024 Third Ave., S., Birmingham, Ala., have plumbing and heating contract for \$750,000, 120-bed Holy Name of Jesus Hospital; Schmidt, Garden & Erikson, Archts., 104 S. Michigan Ave., Chicago, Ill.; J. P. Burke, Constr. Engr., P. O. Box 78, Gadsden; Foster & Creighton Co., Contr., Protective Life Bldg., Birmingham. 7-31

Ark., Booneville—Arkansas Tuberculosis Sanatorium Bd. of Trustees let contract to J. H. Reddick, Kennedy Bldg., Fort Smith, for nurses' home to accommodate 37 and dining room to accommodate 100; \$35,000; Haralson & Nelson, Archts., Merchants Bank Bldg., Fort Smith. 4-3

Ky., Lexington—Good Samaritan Hospital, Henry L. Ott, Passagrille, Fla., and Crestwood, Ky., Pres., Bd. of Trustees, let contract for \$250,000 addition to Wortham Construction Co., Starks Bldg., Louisville, Ky.; Classic type, fireproof, brick and Bowling Green stone, 4 stories, 120 ft. front, buff marble wainscot and floor in lobby, elect. dumb waiters, signal systems; Clifford F. Reichert, Archt.-Engr., Starks Bldg., Louisville. 7-31

Mo., Independence—Independence Sanitarium, Miss. G. E. Copeland, business mgr., erect \$400,000 bldg., W. Van Horn Rd.; work by separate contracts; 7 stories and basement, 34x165 ft.; H. C. Smith, Archt., Auditorium Bldg. 1-23

Hotels and Apartments

Ark., Electric—O. L. Gregory and Bryan Snyder remodeling hotel, erecting cottages, swimming pool; \$50,000; A. O. Clark, Archt., Rogers. 7-31

Ga., Atlanta—J. A. & W. A. Williams, 934 Glenwood Ave., have permit for \$30,000, 2-story and basement, brick veneer apartment, 869 Parkway Drive, N. E.; comp. roof; day labor.

Mo., St. Louis—J. R. Morse, 4553 Flad St., erect \$10,000, 2-story, 44x59 ft., brick tenement, 4965 Oleatha St., comp. roof; owner builds.

Mo., St. Louis—L. Kaplow erect \$45,000, 3-story, 88x107 ft., brick tenement, 5421-27 Wabada St.; tar and gravel roof, steam heat; B. Axelbaum, Contr., both 6219 San Bonita St.

Mo., St. Louis—L. Haich, 4932 Loughborough St., excavating for \$12,000, 2-story and basement, 25x49 ft. brick apartment, 3922 Leona St.; asphalt shingle roof, hardwood floors; owner, Archt.-Bldr.

Mo., St. Louis—Alco Investment Co. has permit for 2-story, 35x52.6 ft., brick tenements, 5230-36A Miami St.; \$20,000, asphalt and tile roofs, hot air heat; Swan Supply Co., Contr., both 808 Chestnut St.; O. J. Popp, Archt., Arcade Bldg.

Mo., St. Louis—Wm. Rodefeld, 4684 W. Florissant St., has permit for \$10,000, 2-story, 33.2x50.6 ft. brick tenement, 3812-14 Penrose St.; G. Becker, Bldr., Ferguson.

Tenn., Maryville—American Amerine Corp., Robert K. Tomlinson, Pittsburgh, Pa., let contract to H. C. Fonde & Son, 3253 Delwood Drive, Knoxville, for 140-room hotel and clubhouse in connection with \$500,000 tourist development in Chilhowee mountains, 4 miles from Maryville; 2 stories, 498 ft. frontage, frame, Colonial architecture; also provide golf courses and swimming pool; Edward Stotz, Archt., Bessemer Bldg., Pittsburgh, Pa.; to be leased to recently formed Smoky Mountain Club, Robert H. Leitch, Member, Park Bldg., Pittsburgh. 6-5

Tex., Houston—J. Frank Boyer, 1815 Driscoll St., erecting \$60,000, 2-story, 16-apartment, 1134 Bethea St.

Tex., Port Isabel—Gaskill-Hodgson Co. let contract to Bay View Construction Co. for \$20,000, 2-story, tile, 9-apartment; Wm. D. Van Siden, Archt., State Natl. Bank Bldg., San Antonio.

Miscellaneous

D. C., Washington—Washington Convention Market Hall Co. erect \$30,000, 1-story, brick and conc. addition to market, 5th, K and L Sts., N. W.; Charles H. Tompkins Co., Contr., 1608 K St., N. W.

Fla., Miami Beach—Indian Creek Golf Club. R. F. Mathews, 5709 Sheridan Ave., let contract to John B. Orr Construction Co., N. E. Sixth St., Miami, for \$375,000 clubhouse, 92nd St. and Biscayne Bay; G. O. Reed, Inc., 1345 20th St., has contract for piling; R. A. Taylor, Spanish Village, Miami Beach, and Treanor & Fatio, Phipps Plaza, Palm Beach, Asso. Archts. 8-7

Fla., Ocala—Pennsylvania-Florida Development Co., Pittsburgh, Pa., let contract at \$21,195 to Ivey Martin & Son, 115 W. Adams St., for 2-story frame and stucco addition to clubhouse; F. T. Uezell, Archt., Youkum Bldg. 7-24

La., Lake Charles—Italo-American Progressive and Protective Club erect 1-story building on Kirkman St.; P. Olivier & Son, Inc., Contrs., 114 Bilbo St.; I. C. Carter, Archt., Kaufman Bldg.

La., New Orleans—Bodlow Cafeteria let contract to J. A. Petty & Sons, Inc., Godchaux Bldg., for addition and improvements to building, 712-16 Gravier St., for cafeteria; Theard & Matthews, Archts., Balter Bldg.

Miss., Pass Christian—Pass Christian Country Club, Geo. R. Smith, Member, started work on \$10,000 clubhouse.

Mo., St. Louis—The Excavating Co., Central Natl. Bank Bldg., has contract for wrecking and excavating for \$5,000,000, 16-story, brick, steel and conc. merchandise mart, Poplar, Spruce, Twelfth and Thirteenth Sts., for Terminal Railroad Assn., Henry Miller, Pres.; to be operated by St. Louis Mart, Lawrence H. Whiting, Pres. of Boulevard Bridge Bank, and Chmn. of American Furniture Mart, 666 Lake Shore Blvd., both Chicago; Walter J. Knight & Co., Wainwright Bldg., St. Louis, Struc. Engrs. and Asso. Archts. 5-29

Okl., Tulsa—Verdigris Club of Tulsa, A. E. Bradshaw, Pres., 1318 E. 25th St., started work on 2-story clubhouse on Verdigris River, 20 miles from Tulsa; later construct swimming pool and create lakes; total cost \$100,000.

Tenn., Nashville—St. Luke's Community House, 5601 New York Ave., Marshall Hotchkiss, Chmn., Bldg. Comm., soon start work on gymnasium; brick, stucco and frame; J. E. Chilton, Contr., 2106 Blair Blvd.; Emmons H. Woolwine, Archt., Ellendale Ave.

Tex., Houston—E. H. Lightfoot, of Lightfoot Construction Co., 3103 Main St., Dr. A. B. Strozler, 2222 Binz St., and John Bering plan to start work in 30 to 60 days on \$250,000 tourist court on 14-acre site, S. Main St. near Brays Bayou; first unit of 60 four-room houses and community clubhouse to cost \$130,000; stucco, tile roof; Lightfoot Construction Co., Contr.; T. E. Lightfoot, Archt.

Railway Stations, Sheds, Etc.

Ga., Atlanta—Atlanta, Birmingham & Coast Ry., L. L. Beall, Ch. Engr., 20 Cain St., N. W., let contract to Capitol Construction Co., Standard Bldg., for 1-story, 36x280 ft., brick, conc. and steel freight depot in Bellwood; sprinkler system; \$27,000. 8-7

Tex., Fort Worth—Following additional sub-contracts awarded on 1-story, 210x60 ft., brick and rein. conc. passenger station and office building for Texas & Pacific Ry. Co. for which P. O. B. Montgomery, Construction Industries Bldg., Dallas, has general contract: Tile, Southland Tile & Mantel Co., 1728 N. Enderly Place; terra cotta, Atlantic Terra Cotta Co.; granite, C. F. Roehl, Dan Waggoner Bldg.; mailchutes, W. J. McCandless, Capps Bldg.; face brick, Acme Brick Co., N. P. Anderson Bldg.; common brick, Ferris Brick Co., 806½ Taylor St., all Fort Worth; hollow tile, Reliance Clay Products Co., Republic Bank Bldg.; waterproofing, A. C. Horn, Construction Industries Bldg., both Dallas; Wyatt C. Hendrick, Inc., Archt., First Natl. Bank Bldg., Fort Worth. 7-24

Schools

Ala., Montgomery—Montgomery County Bd. of Education, L. C. Cardinal, Pres., let contract at \$32,100 to Hodgson & Jones Construction Co., N. Perry St., for 1-story, brick veneer school addition; Walter Ausfeld, Archt., Shepherd Bldg. 7-17

Ark., Gentry—Bd. of Education erect \$45,000, 2-story, 192x168 ft., brick school; James Dinwiddie, Archt.; John Parks, supt. of construction, ready for sub-contracts. 5-29

Ark., Hampton—Hampton Special School Dist., R. N. Lyon, Pres., started work on \$20,000, 1-story, brick veneer, 6-room school; C. D. Gregory Contr., Arkadelphia.

Ark., Weiner—Bd. of Education let contract at \$12,100 to John Dowdy, Jonesboro, for 80x80 ft. brick gymnasium; E. J. Wolpert, Archt., Jonesboro.

Ga., Rome—School Bd. let contract to Smith & Brown, Rome, for \$10,000, 1-story and basement, tile and stucco addition to school; comp. roof; Lockwood & Poundstone, Archts., and Edw. F. Billie, Asso. Archt., both Marietta Bldg., Atlanta.

La., Alto—Richland Parish School Bd., Rayville, let contract to E. E. Rabalais, Bunkie, at \$29,500 for school at Alto and at \$30,000 for school at Archibald; both one story, brick; J. W. Smith & Associates, Archts., Ouachita Natl. Bank Bldg., Monroe. 7-17

La., Loranger—Tangipahoa Parish School Bd. let contract at \$15,495 to Dye & Mullings, Columbia, Miss., for 1-story, 90x100 ft., rein. conc. and brick veneer school; asbestos comp. roof, wood floors; Favrot & Livaudais, Archts., Hibernia Bank Bldg., New Orleans. 7-24

Md., Baltimore—Bd. of Awards, City Hall, let contract at \$26,128 to W. E. Wood Co., 18 N. Howard St., for alterations and additions to heating in School No. 74. 7-31

Miss., Algoma—Bd. of School Trustees let contract to W. F. Rodgers Lumber Co., Pontotoc, for \$12,000, 1-story, brick school. 7-17

Miss., Edwards—Edwards Consolidated School Dist. Trustees let contract to Paine Heating & Tile Co., Fortification St., Jackson, for heating in school; alterations to school will be awarded to day labor in Edwards, material to be furnished by School Bd.; N. W. Overstreet, Archt., Standard Life Bldg., Jackson. 7-31

Mo., Brentwood, Webster Groves—Brentwood School Dist. let contract at \$13,850 to B. C. Holthaus, 8731 Pine Ave., for auditorium and gymnasium addition to high school; Wolf & Millinghaus, Archts.

Mo., St. Louis—St. Liborius Parish, Rev. Henry S. Kister, Pastor, let contract to Ratermann Building & Construction Co., 1943 St. Louis Ave., for 2-story and basement, 133x51 ft., brick, struct. steel and rein. conc. school and guild hall, N. Market and Hogan Sts.; Henry Dreisoerner, Archt., 3828a Arsenal St. 8-7

N. C., Danbury—Stokes County Bd. of Education let contract to Fowler-Jones Lumber Co., 3043 Patterson Ave., Winston-Salem, for 8-classroom and 4-laboratory addition to Nancy Reynolds Memorial School; Northrup & O'Brien, Archts., Starbuck Bldg., Winston-Salem.

S. C., Greenville—Greenville Woman's College, Mayor A. C. Chmn., Bldg. Comm., let contract to Coln Brothers for reconditioning buildings.

S. C., Winnsboro—Bd. of School Trustees, Dist. No. 14, let contract to George R. Price, 1023 W. Confederate St., Columbia, for 1-story, 120x50 ft., tile and stucco addition to school; A. D. Gilchrist, Archt., Rock Hill.

Tenn., Nashville—John Bouchard & Co., 1024 Harrison St., have contract for heating and plumbing and Otis Elevator Co., 11th Ave. and 26th St., New York, contract for 3 passenger and 3 freight elevators, 2 dumb waiters and one ash hoist for 3 buildings under construction (footings in) at Meharry Medical College for which Angle-Blackford Co., American Bank Bldg., Greensboro, N. C., has general contract at \$1,344,000; Gordon & Kaelber, Archts.; Allen S. Crocker, Engr., both 311 Alexander St., Rochester, N. Y. 4-17

Tex., Austin—State Bd. of Control, Claude D. Teer, Chmn., let contract at \$9330 to Brydson Bros., 415 W. 19th St., for 2-story and basement, 12x61 ft., rein. conc. and brick addition to oral training building at State School for Blind; Glesecke & Harris, Archts., Norwood Bldg.

Tex., Blooming Grove—Blooming Grove Ind. School Dist. excavating for \$40,000 school. 5-15

Tex., Corpus Christi—Corpus Christi Ind. School Dist. Trustees, C. D. Jones, Pres., let contract at \$15,488 to L. A. Hanke, 1214 Seventeenth St., for two 1-story, 130x30 ft., 4-classroom schools; frame, comp. shingle roofs; Dielmann & Levy, Archts., State Natl. Bank Bldg.

Tex., Mathis—Mathis Ind. School Dist. Trustees, Frank Curlee, Pres., let contract to Galloway Construction Co., Falfurrias, for 1-story, 50x60 ft., tile and stucco Mexican Grade School; Olin Boese, Archt.; Morris & Noonan, Asso. Archts.-Engrs., both Builders Exchange Bldg., San Antonio. 7-10

Tex., Menard—Menard Ind. Dist. School Bd., John R. Smart, Pres., let contract at \$34,224 to R. H. Richards, Brady, for 2-story, 132x56 ft., brick, tile, rein. conc. and cast stone high school; Arthur R. Swartz, Archt., San Angelo. 8-7

Tex., Wellington—Collingsworth County School Bd. erect brick veneer school at Prairie View in Dist. No. 20; W. L. Cooper, Contr.; also annex to Needwood School in Dist. No. 27.

Stores

Ark.-Tex., Texarkana—Leslie Anderson let contract to John E. McGraw for \$15,000, 2-story, 50x50 ft., brick, tile and stone trim building, 4th St. and State Lane Ave.; conc. and tile floors; second floor for offices of Home Building & Loan Assn., of which Mr. Anderson is secretary; Witt, Seibert & Halsey, Archts.

D. C., Washington—Julius Garfinkel & Co., 13th and F Sts., N. W., let contract to Charles H. Tompkins Co., 1608 K St., N. W., for \$75,000 store, 612-22 Fourteenth St., N. W.; brick, stone, conc. frame and steel. 8-7

Ga., Atlanta—Hugh Richardson, Jr., 160 Peachtree St., N. E., let contract to Stratton Hard, 289½ Peachtree St., N. E., for 1-story, 38x125 ft., brick, stone trim store, W. Peachtree St. and 7th Sts.; A. Ten Eyck Brown, Archt., and A. Barili, Jr. Asso. Archt., both Forsyth Bldg. 8-7

La., New Orleans—Tharp-Sontheimer-Tharp, Inc., 3229 Carondelet St., have permit for building, Claiborne and Milam Sts.; Fred Simonson, Contr., 7131 S. Claiborne St.

Mo., St. Louis—M. Schlender erect \$10,000 2-story, 24x50 ft., brick store and dwelling, 5914 Leona St.; comp. shingle roof; Louis Peters, Archt.-Bldr., both 4300 S. 38th St.

Tenn., Memphis—Art Flower Shop, Mrs. Jessie E. Ramsey, 1122 Union Ave., let contract to Fred J. Sexton, 191 Court Ave., for \$15,000, 2-story, 40x80 ft., brick building, Union and Bellevue Aves.; Joe T. Wallace, Archt.; Ralph E. Dippell, Engr., both Bank of Commerce Bldg. 7-31

Tex., Paris—Hunt Dry Goods Co., R. T. Hunt, let contract to C. E. Powell to remodel Plaza Bldg. and erect building on N. Main St.

Tex., Texline—George Garlets, Propr. Garlets Barber Shop, let contract to John Rotan for 25x40 ft. brick and tile building; cement floor, flat roof; to be occupied in part by barber shop.

Warehouses

Ala., Birmingham—Lamson & Sessions Bolt Co., 31st St. and 27th Ave., erect 1-story, 60x180 ft., brick warehouse; George S. Rider, Archt., Marshall Bldg., Cleveland, Ohio; Johnson Construction Co., Contr., 512 N. Sixth St., Birmingham.

Ala., Birmingham—C. E. Ireland, 2919 Fairway Drive, erect \$25,000, 1-story, 100x136 ft., brick warehouse, Smith Park and Ninth St.; built-up comp. roof, gas steam heat; Mackle Building Co., Contr., 615 S. 27th St.

Ga., Gainesville—L. R. Sams and John M. Hulsey erecting \$15,000, 1-story, 82.6x161 ft., brick warehouse to replace recently burned structure; W. O. Seabolt, Contr., Ridgewood Ave. 8-7

La., Destrehan—E. A. Rossi, 318 Brockenbraugh Court, Metairie, has contract for warehouse; ready for sub-bids.

Mo., St. Louis—Following sub-contracts awarded on \$1,500,000, 10-story and basement, 200x300 ft., brick and rein. conc. warehouse, 16th and Morgan Sts., under construction for International Shoe Co., 1505 Washington St., for which James Black Masonry & Contracting Co., Louderman Bldg., has general contract: Cement finish, H. A. Dailey Contracting Co., 317 N. 11th St.; automatic sprinkling, Grinnell Co., 1140 Central Industrial Bldg.; plumbing, J. Sheehan Plumbing Co., 1609 Olive St.; heating, Midwest Piling & Supply Co., 1450 S. Second St.; wiring, Burton Electric Co., 904 Pine St.; elevator, Otis Elevator Co., 2301 Locust St.; excavation, iron, Atlas Steel Corp., 209 N. Beaumont Excavating Company, 705 Olive St.; steel and St.; Fenestra sash, Sears & Plou, 1003 N. Sixth St.; rein. steel, Missouri Rolling Mill Corp., 68 Manchester St.; material, Hunkins-Willis Lime & Cement Co., 317 N. 11th St.; plans by M. Herbert Rhinehart, Archt., Dept. for International Shoe Co. 4-3

Tenn., Memphis—DeSoto Oil Co., W. E. Gage, Pres., 998 Kansas St., soon start work on \$25,000, 1-story, 100x130 ft., steel seed storage warehouse; comp. roof, conc. and wood floors; owner builds.

Tex., Dallas — Following sub-contracts awarded on \$500,000, 4-story office building and warehouse for Ferro Concrete Construction Co., 37 W. Van Buren St., Cincinnati, Ohio; Great Atlantic and Pacific Tea Co., Lessee; foundations in; Excavation, Dallas Transportation Co., 817 Bourbon St.; form material, Griffiths & Co., 918 S. Lamar St.; metal column forms, R. J. Dewees Co., 3015 Grand St.; rein. bars, Southern States Steel

Co., 503 S. Haskell St.; conc. piles, Terrell Concrete Pile Co.; metal partitions, bar spacers, J. L. O'Hearn, 1915 N. Harwood St.; Redmixed conc., Penniman Gravel & Material Co., 3000 Junius St.; millwork and glass, Buell Lumber & Manufacturing Co., 731 N. Hawkins St.; misc. and orna. iron, Mosher Steel & Machinery Co., 5209 Maple St.; roof and sheet metal, Rogers Asbestos Co., 953 S. Lamar St.; plumbing and heating, Far-

well Co., 3220 Ash Lane; wiring and fixtures, N. E. Busby & Co., 4004 Main St.; finish hardware, Huey & Philip Hardware Co., 1029 Elm St.; elevators, Otis Elevator Co., 1822 Young St., all Dallas; tin clad and kalomel doors, American Sheet Metal Works, 331 N. Alexander St., New Orleans, La.; Christy-Dolph Construction Co., Gen. Contr., Construction Co., Gen. Contr., Construction Industries Bldg., Dallas. 7-31

WANT SECTION

THE CLASSIFICATIONS IN THIS SECTION ARE:

Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Machinery and Supplies

Air Compressor.—Battery Machinery Co. (Mchy. Dealer), Rome, Ga.—Wants prices and data on 8x8, used air compressor with gasoline engine and air tank mounted on 4-wheel truck.

Golf Tee Manufacturing Machinery.—Republic Steel Corp., Geo. H. Gray, Pur. Agt., Southern Dist., Empire Bldg., Birmingham, Ala.—Wants prices and data from manufacturers of automatic machines for producing wood golf tees.

Shipping Container Manufacturing Machinery.—L. M. Milligan, Lockhart, Ala.—Wants prices and data on machinery for manufacturing large shipping containers similar to those used in exporting automobiles.

Woodworker.—R. P. Johnson (Mchy. Dealer), Wytheville, Va.—Wants prices and data on used, heavy variety woodworker, with or without power.

Guyana Machine Shops, Logan, W. Va.—Wants prices and data on following:

- (1) **Boring Mill**—horizontal, boring, drilling and milling or floor mill
- (2) **Crane**—about 5-ton capacity, locomotive type
- (3) **Drill (Air)**—Thor, 1½-in. capacity or larger
- (4) **Drill (Radial)**—preferably single pulley drive
- (5) **Hoists**—for I beam, 1 to 5-ton capacity, a. c. and d. c., 220 volts
- (6) **Motor**—a. c., 220-440 volts, 3 phase, 60 cycle, 5 h. p. to 100 h. p.
- (7) **Welding Machine**—200 to 300 ampere, gasoline driven.

J. P. Greven, Pres., Reserve Public Utilities, Inc., Reserve, La.—Wants prices on following for gas distribution line:

- (1) **Pipe (Gas)**—1½-in. and ¾ in. for screwed joints and 2-in. for welded joints.
- (2) **Gas Heaters.**
- (3) **Gas Appliances**—including stoves, hot plates, water heaters, etc.
- (4) **Pressure Meters**—100
- (5) **Pressure Regulators**—100
- (6) **Stop Cocks**
- (7) **Valves**

Building Material and Equipment

Alex W. Hermanson, Contr., 414 Butler Blvd., Daytona Beach, Fla., wants prices on following for \$17,000 clubhouse for Smyrna Yacht Club, New Smyrna, Fla.:

Flooring—hardwood, linoleum, terrazzo
Roofing—tile
Steel Sash and Trim.

D. A. Wallis Co., Inc., 4011 First Ave., North, Birmingham, Ala., wants prices on following:

Cast Stone
Flooring—terrazzo
Limestone
Marble
Metal Doors
Roofing (Flat)—built-up, composition, slate
Steel Sash and Trim
Tile—hollow
Vaults
Brass and Bronze Work.

Edward Stein, Archt., Fredericksburg, Tex., wants prices on following for \$45,000 school:
Flooring—hardwood
Tile—hollow.

E. S. Hendren, Supt., Surry County Bd. of Education, Mount Alry, N. C., wants prices on following for schools at Mount Alry, Siloam, Green Hill, Bannertown and Cooke. \$72,000:

Flooring—hardwood
Plaster Board
Roofing—asbestos shingle, built-up, tile
Tile—hollow.

Gallivan Construction Co., Gallivan Bldg., Greenville, S. C., wants prices on following for \$40,000 library at Medical College of South Carolina, Charleston, S. C.:

Cast Stone
Flooring—hardwood
Roofing—built-up
Tile—hollow.

Giesecke & Harris, Archts., Norwood Bldg., Austin, Tex., want prices on following for \$45,000 bank, New Braunfels, Tex.:

Cast Stone (alternate, natural)
Flooring—terrazzo, tile, composition
Limestone (alternate)
Steel Sash and Trim
Tile—gypsum
Vaults
Brass and Bronze Work.

Hentz, Adler & Shutze, Archts., Candler Bldg., Atlanta, Ga., want prices on following for \$80,000 Law Bldg., University of Georgia, Athens, Ga.:

Cast Stone
Flooring—linoleum, terrazzo
Limestone
Marble
Tile—hollow, interior.

Guyana Machine Shops, Logan, W. Va., wants prices and data on following:
Building—about 40x50x12 ft. to eaves.

John R. Bingham, Contr., 1201 Garden St., Austin, Tex., wants prices on following for \$10,000 dwelling:

Cast Stone
Flooring—hardwood, linoleum, tile
Plaster Board
Roofing—asbestos shingle
Tile—interior.

Ralph C. Talbott, 816 American Bldg., Baltimore, Mo., wants prices on following for dwellings:

Flooring—hardwood, linoleum, tile
Gas Ranges
Heating Plant—hot water
Kitchen Cabinets
Roofing (hip)—asphalt shingle.

R. L. Brown, Contr., Atmore, Ala., wants prices on following for \$50,000 school, Citronelle, Ala.:

Cast Stone
Roofing—asbestos shingle, asphalt shingle, built-up
Steel Sash and Trim.

Miscellaneous

Ice Pick.—G. M. Bass, 1206 Main St., Lynchburg, Va.—Wants prices and data from firms in position to manufacture 2 or 3-part ice picks.

Bids Asked

Ambulances.—Purchasing and Contracting Officer, Holabird Q. M. Depot, Baltimore, Md.—Bids Aug. 20 for 20 motor driven ambulances.

Automobiles.—Purchasing and Contracting Officer, Holabird Q. M. Depot, Baltimore, Md.—Bids Aug. 21 for 10 7-passenger automobiles.

Automobile.—U. S. Engr. Office, Huntington, Wt. Va.—Bids Aug. 19 for automobile.

Automobiles.—Purchasing and Contracting Officer, Holabird Q. M. Depot, Baltimore, Md.—Bids Aug. 19 for 27 5-passenger automobiles, closed type.

Bridges.—State of Tennessee. Bids for 10 bridges. See Construction News—Roads, Streets, Paving.

Bridges.—State of Missouri.—Bids for 26 bridges.—See Construction News—Roads, Streets, Paving.

Bridge.—Natchez, Miss. See Construction News—Bridges, Culverts, Viaducts.

Bridge.—Knoxville, Tenn. See Construction News—Bridges, Culverts, Viaducts.

Bridge.—State of Virginia.—See Construction News—Roads, Streets, Paving.

Concrete Floor Enamel.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Aug. 21 for 50 gal. concrete floor enamel, delivery Quantico, Va.

Dikes.—U. S. Engr. Office, Memphis, Tenn.—Bids Sept. 3 for constructing 850 lin. ft. permeable crib dikes, Mississippi River, Bader's Front, Mo., 121 below Cairo, Ill.

Diving Telephone.—U. S. Engr. Office, Huntington, W. Va.—Bids Aug. 19 for diving telephone.

Drugs, etc.—Commanding Officer, St. Louis Medical Depot, St. Louis, Mo.—Bids Aug. 18 for drugs and chemicals.

Electrical Supplies.—U. S. Engr. Office, Huntington, W. Va.—Bids Aug. 22 for electrical supplies.

Elevator.—Treasury Dept., Supvg. Archt., Washington, D. C.—Bids Aug. 28 for elevator, El Dorado, Ark.

Filter.—See Sewage Treatment Plant.

Furniture.—Comms., Dist. of Columbia, Washington, D. C.—Bids Aug. 18 for 8000 pupils chairs, 585 pupils tables, 738 desks and 120 tablet arm chairs.

Garage Supplies.—Marine Corps, J. M. Dept., Washington, D. C.—Bids Aug. 20 for garage supplies, delivery Quantico, Va.

Generator.—See Water Works.

Grading, etc.—Div. of Supplies, Dept. of Commerce, Washington, D. C.—Bids Aug. 18 for complete clearing, grading and conditioning 6 intermediate fields, El Paso to Wink, Tex.

Gravity Filters.—See Water Works.

Jetties (Timber).—State Roads Comm., Dept. of Public Works, Baltimore, Md.—Bids Aug. 19 for timber jetties at Ocean City, Md.

Ink Mill.—Pur. Agt., Government Printing Office, Washington, D. C.—Bids Aug. 18 for 4-roll ink mill.

Levee.—Bd. of State Engrs., New Orleans Court Bldg., New Orleans, La.—Bids Aug. 19 for 23,000 cu. yd. levee. See Construction News—Miscellaneous Construction.

Levees, etc.—Bd. of State Engr., New Orleans Court Bldg., New Orleans, La.—Bids Aug. 19 for bank protection and new levees. See Construction News Columns—Miscellaneous Construction.

Lumber.—Quartermaster, Fort Bliss, Tex.—Bids Aug. 18 for approx. 23,000 ft. b. m. building lumber, 40,000 lin. ft. moulding, etc.

Magnesium Fluosilicate Crystals.—Marine Corps, Q. M., Washington, D. C.—Bids Aug. 21 for 7000 lb. magnesium fluosilicate crystals, delivery Quantico, Va.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Aug. 22 for following, Sch. 2578:

Marine-type gasoline engines, steel bars, lead pipe, coil chain, taps, stillson wrenches and parts, cross-cut saws, garden hoes, grubbing hoes, calcium chloride, steel ship scrapers, red writing fluid.

Miscellaneous Machinery, Tools, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Aug. 19 for double surfacer, bar shears, shear cut saw and blades, planer and jointer, pipe threading and cutting off machine, all motor driven; bids Aug. 26 for automatic screw machine.

Miscellaneous.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C. Bids Aug. 19 for fire extinguishers, bomb arming wires, soya bean oil, tin cans, weighing scales, canned catsup, etc., to navy yard, Norfolk; plans with Supply Officer, Norfolk, Va., and Bureau of Supplies and Accounts, Washington.

Miscellaneous Machinery.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Aug. 26 for motor driven engine lathes and motor driven crank shaper.

Miscellaneous.—Panama Canal, Gen. Pur. Officer, Washington, D. C.—Bids Aug. 28 for following, Sch. 2579:

Dump cars and track, pump units, press numbering machines, steel, iron, pipe boiler tubes, brass, copper nickel alloy, yellow metal, zinc, solder, lightning arrestors, etc.

Motorcycles.—Purchasing and Contracting Officer, Holabird Q. M. Depot, Baltimore, Md.—Bids Aug. 18 for 100 motorcycles, solo.

Photographic Supplies.—Commanding Officer, St. Louis Medical Depot, St. Louis, Mo.—Bids Aug. 19 for films, cardifilm, cardiomounts, print roller, photographic paper, lantern planties, etc.

Pipe (Copper).—Bd. of Awards, Baltimore Md.—Bids Aug. 20 for furnishing copper pipe to Bureau of Water Supply; plans, etc. from office of E. G. Rost, Water Engr., 501 Municipal Bldg.

Pipe (Terra Cotta).—See Sewer Construction.

Pumping Station.—See Sewage Treatment Plant.

Plumbing Supplies.—Quartermaster, Fort Bliss, Tex.—Bids Aug. 25 for pipe, unions, elbows, bushings, nipples, couplings, faucets, traps, etc.

Pump House.—See Water Works.

Pumping Equipment.—See Water Works.

Reservoir.—See Water Works.

Road.—Jonesboro, La. See Construction News—Roads, Streets, Paving.

Roads.—State of Tennessee. Bids for 9 roads. See Construction News—Roads, Streets, Paving.

Roads, etc.—Fort George G. Meade, Md.—See Construction News—Roads, Streets, Paving.

Roads.—State of Maryland. Bids for 2 roads. See Construction News—Roads, Streets, Paving.

Roads.—State of Virginia.—Bids for 4 roads. See Construction News—Roads, Streets, Paving.

Road.—Washington, D. C.—See Construction News—Roads, Streets, Paving.

Road.—Hamilton, Ala. See Construction News—Roads, Streets, Paving.

Road.—Mobile, Ala.—See Construction News—Roads, Streets, Paving.

Roads.—State of Missouri.—Bids for 32 roads—See Construction News—Roads, Streets, paving.

Saws, Woodworking Machine.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Aug. 26 for scroll and bench saws, and woodworking machine.

Screening.—Constructing Quartermaster, Fort Monroe, Va.—Bids Aug. 19 for constructing and installing complete screening 6 4-family apartment houses.

Sewer Construction.—Sewerage and Water Bd., New Orleans, La.—Bids Oct. 1 for Contr., 116-D, riveted steel pipes for Drainage Station 3 and 7; Contr. 117-D truck type switchboard, motor generators, transformers and accessories to drainage stations 3 and 7.

Sewer Construction.—City of Salisbury, N. C., P. P. Pilcher, Mgr.—Bids Aug. 21 for sewerage improvements, including, laying and completing approx. 13,000 ft. of 8-in. terra cotta pipe sewers; 38 brick manholes; 8 brick flush tanks

Shingles.—U. S. Engr. Office, Huntington, W. Va.—Bids Aug. 21 for shingles.

Shore Protection.—U. S. Engr. Office, Savannah, Ga.—Bids Aug. 20 for constructing shore protection work, eastern shore Ft. Screven reservation, Tybee Island, using steel sheet piles, creosoted timber, galv. iron bolts and nuts, cast iron washers and riprap stone, with alternate construction using creosoted wood piles, creosoted timber, galv. iron bolts and nuts, cast iron washers and riprap stone.

Sewage Treatment Plant.—State Bd. of Health, Sanatorium, Miss.—Bids Aug. 25 for sewage treatment plant at State Tuberculosis Sanatorium; work includes complete sewage treatment plant, consisting of pumping station and pumps, Imhoff tanks, dosing tank, trickling filter, chlorinator and outfall lines to plant; plans etc. at office of engineers, Room 215, Old Capitol Bldg., Jackson, Miss.

Street.—Baton Rouge, La.—See Construction News—Roads, Streets, Paving.

Street.—Corpus Christi, Tex.—See Construction News—Roads, Streets, Paving.

Tanks.—See Sewage Treatment Plant.

Tank.—See Water Works.

Tractor.—City, P. G. Lovenskiold, Mayor, opens bids Aug. 21 for crawler type tractor, 5-tons capacity; Theo. Koester, City Secy.

Viaduct, etc.—Columbus, Ga. Bids for viaduct, underpass and culvert. See Construction News—Bridges, Culverts, Viaducts.

Water Works.—City of Hollywood, Fla. C. E. Burgoon, City Mgr. Bids Aug. 27 for water works, including following: Deep well pump; well pump house; rein. conc. and stucco station; wooden settling tank, aerator, agitator, etc.; conc. structures, clear water reservoir and sludge sump; pipe lines in and around station; gravity filters; chemical dry feed machines; carbon dioxide generating plant; pumping equipment; elevated tank; sludge sewer; water mains; oil engine generator, complete.

Water Piping.—Treasury Dept., Supvg. Archt., Washington, D. C.—Bids Sept. 2 for furnishing and installing new brass water piping in U. S. court house and post office, Charleston, S. C.

Water Mains.—Bd. of Awards, Baltimore Md.—Bids Aug. 20 for excavating trenches and laying water mains in Pennington Ave.; plans, etc. from E. G. Rost, Water Engr., 501 Municipal Bldg.

Welding Shop Equipment, etc.—Bd. of Awards, Office of City Register, City Hall, Baltimore, Md.—Bids Aug. 20 for furnishing and installing welding shop equipment for Boys' Vocational school and alterations to steam heating plant, School 293, Howard and Centre St., for Dept. of Education.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Make New Connections.

T. L. Lewis, of the A. M. Byers Company, Pittsburgh, manufacturers of wrought-iron pipe, has resigned to join the Norvell-Wilder Supply Company, Beaumont, Tex., distributors of oil well supplies. Mr. Lewis was connected with the Byers organization for 18 years, serving as general manager of sales for the past 12 years. George E. Clifford, Pittsburgh division manager for the Byers company, has resigned to become assistant sales manager of the pipe division of the Republic Steel Corporation, Youngstown, Ohio.

Copperweld Sales Increase.

Export sales of Copperweld products for the first six months of 1930 show a substantial increase over sales for the corresponding period in any previous year, according to a report of the Copperweld Steel Company, Glassport, Pa. Indications are that 1930 will show the greatest tonnage sales in the history of the company. Copperweld wire and strand, because of high strength and non-rusting qualities, is being used in increasing quantities for overhead construction.

Quigley Buys Annite Industries.

The business and good will of Annite Industries, formerly located in Washington, D. C., has been purchased by the Quigley Company, Inc., 56 West 45th street, New York. Annite is an all-purpose cleansing compound with "exceptional detergent properties," it is said, due to its colloidal action. It is used in laundries, packing houses, bakeries, textile mills, etc., as well as in the household.

Opens Florida Sales Offices.

Three Florida sales offices were opened recently by the Hinde & Dauch Paper Co., Sandusky, Ohio, manufacturers of corrugated fibre boxes and packing materials. The company will be represented in Jacksonville by the Southern Brokerage Company; in Tampa by H. T. Hoff and in Miami by N. M. Malabel.

Memminger on Wachovia Board.

C. G. Memminger of Asheville, N. C., has been elected to the board of the Asheville office of the Wachovia Bank and Trust Company, Winston-Salem, N. C. Mr. Memminger is a consulting mining engineer and is a member of the Asheville Board of Trade, the Chamber of Commerce of the State of New York, American Chamber of Commerce in France, Institute of American Mining Engineers and other organizations. He is known to be deeply interested in development of the resources of the Southern States. Mr. Memminger is president of the Coronet Phosphate Company of New York and Florida and of an affiliated chemical research corporation. He is also president of the Diamond Sand Company, Lake Wales, Fla.

Dangler in Research Association.

The Standardization and Development Committee of the Cast Iron Pipe Research Association, New York, has retained J. R. Dangler as secretary, to look after all standardization and development work of the cast iron pipe industry. Mr. Dangler was formerly vice-president and general manager of the Massillon Iron and Steel Company and later assistant to the president of the Central Steel Company of Massillon, Ohio. His office will be at 923 Union Trust Building, Cleveland, Ohio.

Truscon Steel Names Vice President.

The Truscon Steel Company, Youngstown, Ohio, announces appointment of A. H. Schaffert as vice president. Mr. Schaffert is manager of the main plant at Youngstown and has contributed largely to efficient production and the high quality of Truscon products.

Opens Tulsa Sales Office.

The Chicago Bridge & Iron Works, Chicago, Ill., has opened a sales office in the Exchange Bank Building, Tulsa, Okla., in charge of D. A. Leach, formerly of the company's New York office.

ARMCO Appointments.

A. F. Murphy has been appointed works manager of the Zanesville division at Zanesville, Ohio, of the American Rolling Mill Company, Middletown, Ohio, and this division, one of Armco's four manufacturing units, will be operated separately. The others are at Ashland, Ky., Butler, Pa., and Middletown. L. F. Reinartz has been appointed works manager of the Middletown division and G. D. Tranter, general superintendent. S. E. Graeff was appointed assistant general superintendent at Middletown.

Advertising Agencies Combine.

The advertising agency of Fuller & Smith, Cleveland, Ohio, and the agency of the F. J. Ross Company, Inc., New York and San Francisco, have combined under the firm name of Fuller & Smith & Ross, Inc. The consolidated company will maintain offices in each of the three cities named. Officers include F. J. Ross, chairman; A. L. Billingsley, president; P. W. Murphy, treasurer, and C. M. Seymour, secretary.

Manager of Foxboro Atlanta Office.

W. W. Barron has been appointed manager of the Atlanta office of the Foxboro Co., Inc., Foxboro, Mass., manufacturers of industrial indicating and recording instruments. Headquarters will be at 1217 Atlanta Trust Building and he will be assisted by M. C. Welker and B. B. Peacock. A. W. Taber, former manager of the Atlanta office, has been transferred to the Detroit office.

Telephone Rates Cut to South America.

A general reduction of \$6 has been made by the American Telephone and Telegraph Company on all telephone calls between North and South America. With this new schedule of rates, the cost of a conversation between New York and Buenos Aires is now \$30 for the first three minutes and \$10 for each additional minute.

Westinghouse Sales Service.

M. C. Morrow, domestic appliance sales manager of the Westinghouse Electric and Manufacturing Company at Mansfield, Ohio, announces the creation of a sales service section with W. W. McFadden as manager.

Trade Literature

Panelboards and Cabinets.—Bulletin No. 50, devoted to the Leader type LNTP panelboards and cabinets, has been issued by the Frank Adam Electric Company, St. Louis, Mo. Southern district offices of the Adam company are maintained in Atlanta, Baltimore, Dallas, Kansas City, Memphis, New Orleans, Orlando and Tulsa.

Sullivan Compressors.—Literature recently issued by the Sullivan Machinery Company, Chicago, includes bulletins 83-T, 83-X and 83-Z. Bulletin 83-T describes and illustrates WL-22 and WL-44 vertical single stage air compressors direct driven by electric motors. These units are built in capacities from 120 to 240 feet, the larger being a 4-cylinder machine. Bulletin 83-X is devoted to straight line compressors and bulletins 83-Z to high pressure machines.

Yellow Strand Rope.—The August issue of The Yellow Strand, a publication of the Broderick & Bascom Rope Company, St. Louis, is dedicated to the State of Alabama and its industries. Many applications of B & B Yellow Strand rope and other Broderick & Bascom products are shown, including what is said to be the longest continuous slope cable in the state. It is of B & B plow steel.

Mine and Industrial Locomotives.—A 28-page booklet, designated as special publication 1873, has been issued by the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., and the Baldwin Locomotive Works, Philadelphia. The booklet contains data covering the performance and construction of each of 17 mine and 7 industrial locomotives.

Railroad Equipment.—The Whiting Corporation, Harvey, Ill., manufacturers of cranes, foundry equipment and railway specialties, have issued a loose-leaf bulletin, "Operation and Maintenance of Whiting Railroad Equipment."

Machinery and Supplies.—A new 1930 catalog devoted to power transmission machinery and mill and elevator supplies has been issued by the Strong-Scott Manufacturing Co., Minneapolis, Minn.

More People Employed and Buying Power Greater Than During 1921 Depression

Trade revival is impending is the belief of Julius H. Barnes, chairman of the board of the Chamber of Commerce of the United States. A recent press dispatch quotes Mr. Barnes as looking for a marked revival of business following immediately on the first real evidence that a new confidence has released idle reserves of capital awaiting investment the world over. In his opinion the business recession was brought about by interference of government in the normal play of supply and demand, and unreasonable pessimism has intensified the situation. Mr. Barnes states:

"There is reason to expect that at some favorable moment the vast reservoir of business experience, the efficient army of worker production and all the idle reserves of capital awaiting investment when assured of some measure of security, will become steadily affected and the march of progress at home and throughout the world will again be resumed.

"This kind of confidence coupled with patience and good judgment should be measured against unreasoning pessimism, which too often has been given unwise expression. It would be well if, for example, American tourists soberly studied basic truths in the present situation and carried something of this spirit of patient confidence to countries abroad that very likely they are to expect from America the first note of renewed activity."

Mr. Barnes recalled that today there

Silo Construction.—Louisiana Circular No. 2, devoted to silage and silo construction, was recently issued by the Louisiana State University, Baton Rouge, and the Agricultural and Mechanical College agricultural experiment stations.

Box Car Loaders.—Two data sheets illustrating and describing a standard type and a heavy duty type of portable box car loader have been issued by the Stephens-Adamson Mfg. Co., Aurora, Ill., manufacturers of conveying, transmission and screening machinery and belt conveyors.

Powertrax.—The International Harvester Company of America, Inc., Chicago, has issued the initial number of a new house organ—Powertrax. In announcing the magazine, M. F. Holohan, sales manager, states that it will "portray, in story and picture, the forward march of McCormick-Deering industrial tractor power."

Menu Cards.—Three menu cards of the Missouri Pacific Lines, St. Louis, devoted respectively to breakfast, luncheon and dinner, are featured by articles of L. W. Baldwin, president, and J. G. Carlisle, director of the industrial development department. Mr. Carlisle writes of Fruit and Vegetable Canning, Mineral and Chemical Resources and The Paper Industry along the lines.

are gainfully employed in the United States 44,000,000 men and women as against 31,000,000 during the depression period of 1921. Today he estimated there are but 3,000,000 unemployed as against 6,000,000 during the period of nine years ago. This increase of 13,000,000 workers at work, he said, brings with it the fact that wage scales and salaries are higher and the aggregate pay and buying power therefore exceeds that in the post-war depression period.

Strawberry Association Planned

Gulfport, Miss.—In the belief that strawberries may be profitably grown in the Mississippi coastal area, bankers, business men and agricultural interests, including agricultural agents of the Louisville and Nashville Railroad, are promoting the organization of the Gulf Coast Strawberry Association. Dr. A. R. Robertson, Pass Christian, Vernon Pace, Gulfport, and Emil Gex, Bay St. Louis, were appointed an organization committee.

The first sweet potato curing house in Catawba County, North Carolina, was built in 1888 by J. L. Ingold of Hickory, route 3. Mr. Ingold has produced an average of 300 bushels of sweet potatoes per acre. He sold 60,000 slips from his plant beds this spring.

Phosphate Rock Sales Near Record Last Year—South Produces 99 Per Cent of Domestic Output

Phosphate rock sold or used by producers in 1929 exceeded all previous records except for 1920, and amounted to 3,761,164 long tons, valued at \$13,153,259, according to the United States Bureau of Mines. The quantity and value, by States, of the various kinds of phosphate rock sold or used by producers in 1929 were as follows:

	Long tons	Value
Florida: Hard rock...	72,733	\$267,218
Land pebble...	3,015,874	9,633,856
	3,088,607	9,901,074
Idaho: Western rock...	35,899	141,931
Montana: Western rock...	40	400
Tennessee: Brown and blue rock	633,939	3,097,104
Wyoming: Western rock	2,679	12,750
	3,761,164	\$13,153,259

Florida held first place, as usual, and was the source of 82 per cent of all the phosphate rock sold or used by producers in the United States in 1929, the same as in 1928. Land pebble rock constituted 98 per cent of the Florida output in 1929, and showed an increase of 8 per cent in quantity and 7 per cent in value, as compared with 1928; the average value f. o. b. mines was \$3.21 a long ton in 1929, as compared with \$3.28 a ton in 1928. The hard rock production in 1929 decreased in both quantity and value as compared with 1928; the average value f. o. b. mines in 1929 was \$3.67, as compared with \$4 a long ton in 1928. The production of phosphate rock in Tennessee in 1929, consisting of brown and blue rock, showed an increase of about 10 per cent in quantity, and about 8 per cent in value, as compared with 1928. The production of brown rock constituted more than 90 per cent of the total. The average value a long ton was \$4.89, as compared with \$4.95 in 1928. The quantity of phosphate rock sold or used by producers in the Western States in 1929 decreased 5.5 per cent as compared with 1928.

Although the total sales of phosphate rock by producers in 1929 increased 7 per cent in quantity and 6 per cent in value, as compared with 1928, there was continued decrease in production of Florida hard rock and continued decline in the domestic market for phosphate rock in the Western States. The average selling value of all varieties was \$3.50 f. o. b. mines as compared with \$3.55 in 1928.

Imports in 1929, about 2 per cent less than in 1928, amounted to 44,899 long tons, valued at \$469,171. Exports were the largest of any year except 1903, being 1,142,746 long tons, valued at \$5,-

386,919, according to the official records. Producers in Florida alone reported shipments during 1929 from the mines for export. These export shipments amounted to 1,110,325 long tons, consisting of 94 per cent land pebble and 6 per cent hard rock, which together constituted 36 per cent of the total sales in Florida in 1929, and showed an increase of 25 per cent as compared with 1928. The output of land pebble in Florida increased 8 per cent in 1929 over 1928, and this increase was apparently all accounted for in the exports, as shipments of land pebble to domestic markets were less than in 1928. Total sales to domestic consumers, which comprised 64 per cent of the Florida sales and all the sales of the other producing States, Idaho, Montana, Tennessee, and Wyoming, indicated a small increase in the quantity of phosphate rock consumed in the United States in 1929 as compared with 1928.

Florida Phosphatic Sands

Following a series of laboratory tests, supplementary to experiments originated in 1927, the Bureau of Mines has issued a report on the gravity concentration on certain Florida phosphatic sands. The hard rock field is said to be in Marion and Citrus counties, and the land-pebble district, "with a production of almost 80 per cent of the Nation's requirements," to be situated in Polk and Hillsborough counties.

First saying that gravity concentration was applied in the laboratory in treatment of certain types of low-grade phosphatic sands now rejected as waste by washing plants in the Florida land-pebble district, the summary adds:

"Concentrates were produced with a higher phosphate content than the minimum commercial grade now regularly marketed in the district," the recoveries ranging from 35 to 45 per cent of the phosphate content of the sands. "If products containing 60 per cent bone phosphate of lime can be utilized by the industry, the indicated recoveries range from 43 to 83 per cent of the phosphate content of the sands" studied in the investigation, says the report.

Several concerns have been investigating commercial possibilities of developing the process.

Contract Awarded for Silk Mill

Rockwood, Tenn. — The Rockwood Welfare Corp. has awarded contract to J. G. Murphy, Harriman, Tenn., to erect a new silk mill here. The new industry will be known as the Cumberland Silk Mills. Ben J. Lamb is president of the enterprise.

\$23,000,000 HYDRO-ELECTRIC DEVELOPMENT

West Virginia Company Would Build Dams and Power House of 199,000 Horsepower Capacity

Charleston, W. Va.—Amending an application filed with the Public Service Commission in 1924, asking permission to develop the Bluestone hydro-electric project on New River in Summers County, the West Virginia Power Company of this city, a subsidiary of the Appalachian Electric Power Co., New York, now asks authority to develop two projects instead of one. These would be known as the Bluestone projects and would include what will be known as the Hinton development and the Bull Falls development in Summers, Mercer and Monroe counties, West Virginia, and extending into Giles County, Virginia.

The Hinton development would be made by building a dam about 43 feet high; a reservoir with a utilization pondage capacity of about 20,500 acre feet or about 900,000,000 cubic feet for normal operation after the construction of the Bull Falls dam, and a power station with an installed capacity of 31,000 horsepower. The cost of this project is estimated at \$6,171,000. The Bull Falls development, 8.8 miles upstream from the Hinton development, would involve a dam approximately 125 feet high; a reservoir with a storage capacity of 125,000 acre feet, and a power station with an installed capacity of 168,000 horsepower. It is estimated that this project would cost \$16,755,000. The proposed plans contemplate the development of at least the same fall or head by means of the two dams and power stations as had been contemplated by one dam and a single power station as outlined in the original application. The commission is expected to hold a formal hearing on the amended application in September.

Will Use ZMA Timber Treatment

Hagerstown, Md., A license has been granted by the Curtin-Howe Corp., New York, timber preservation engineers, to the Maryland Wood Preserving Co. here and the T. J. Moss Tie Co., Columbus, Miss., for the use of the ZMA process of timber treatment. The Curtin-Howe organization has developed a two-movement process for the treatment of cross ties, first treating the ties with ZMA for toxic protection and with petroleum for mechanical protection. Other Southern plants using the ZMA process, include enterprises at Norfolk, Va., Augusta, Ga., Jacksonville, Fla., and Hattiesburg, Miss.

LEADITE

Trade Mark Registered U.S. Pat. Office

—offers these advantages for
Bell and Spigot Water Pipe Line Construction



Laying 12 in. c.i. Bell & Spigot Pipe—
Indianapolis Water Company, Indianapolis, Ind.

Effects a Saving in Cost of
Material.

Saves the Expense of
Caulking.

Reduces Cost of digging
bell holes.

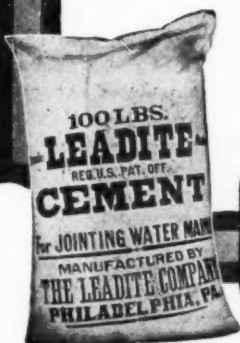
Is Light in weight and Easy
to handle.

Speeds up Completion of
the job, thereby saving large
sums in "Interest Charges"
—and making the water line
a "Revenue Producer" in
quicker time.

*LEADITE has been used on
thousands of miles of Bell
& Spigot Pipe with
great success.*

*The pioneer self-caulking material for c. i. pipe.
Tested and used for over 30 years.
Saves at least 75%.*

THE LEADITE COMPANY
Land Title Building - - Philadelphia, Pa.



No Caulking'



FINANCIAL NEWS

Bond Issues Proposed

Ala., Mobile—City Comsn., Cecil F. Bates, Commr., probably issue \$50,000 bonds for lighting facilities and other improvements at airport.

Ark., Paragould—Light and Power Plant—City votes Sept. 21 on \$125,000 bonds. 6-26

Fla., Pensacola—Bridge—Escambia County Commrs., W. S. Barrineau, Chmn., plans selling \$200,000 bonds for bridge across Perdido Bay.

* Ga., Americus—Anthony School Dist., Sumter County, voted \$15,000 bonds.

Ga., Thomasville—Thomasville School Dist. plans voting Sept. 24 on \$125,000 bonds. 7-31

Ga., Thomasville—City plans voting in September on \$10,000 bridge bonds. 7-31

Ky., Columbia—Road—Adair County Commrs., S. C. Neat, Clk., probably sell \$182,000 bonds Sept. or Oct.

Ky., Paris—Bourbon County Fiscal Court considering \$100,000 highway bond issue.

La., Jonesboro—Jackson Parish School Bd. plans calling election soon on bonds for School Dist. No. 10.

La., West Monroe, Monroe—City, L. L. Wood, Clk., plans receiving bids within 30 days for \$27,000 certificates of indebtedness.

Miss., Lexington—Holmes County voted \$30,000 bonds for school annex at Tchula; defeated \$20,000 Coxburg school bonds. 7-17

Miss., Starkville—Road—Oktibbeha County Bd. of Suprs. contemplates \$20,000 road bond issue.

N. C., Greensboro—Guilford County Commrs., Willis Booth, County Accountant, receives bids Aug. 15 for \$400,000 not over 6% revenue anticipation notes.

N. C., Greensboro—Guilford County Commrs., R. H. Wharton, Clk., received high bid from Braun, Bosworth & Co., Toledo, at 100.422, for \$470,000, 4½% improvement bonds. 7-31

N. C., Reidsville—Refunding—City, Mrs. Lola Y. Irvin, Clk., receives bids Aug. 21 for \$65,000, \$1000 denom., not to exceed 6% bonds.

N. C., Wilmington—Refunding—City B. H. Dewey, Clk., receives bids Aug. 18 for \$125,000, \$1000 denom., not to exceed 6% bonds.

N. C., Wilmington—City receives bids Aug. 18 for \$125,000, \$1000 denomination refunding bonds; bidders name rate interest.

Okla., Lawton—Water—City, Todd Sanders, Clk., receives bids Aug. 11 for \$600,000 bonds.

Okla., Oklahoma City—Water—City, E. M. Fry, Mgr., votes in fall on \$1,300,000 bonds. 7-10

S. C., Spartanburg—Committee for Spartanburg Metropolitan Sub-district, B. U. M. Kilgo, Chmn., receives bids Aug. 25 for \$100,000 not to exceed 6% sewer bonds.

S. C., Travelers Rest—Greenville County Bd. of Education, James F. Whantley, Supt., called election for Aug. 19 on \$30,000 bonds. 7-24

Tenn., Crossville—Cumberland County Court plans selling \$50,000 5½% road bonds.

Tenn., Trenton—City, School Bd. receives bids for \$15,000 gymnasium bonds. 7-29

Tex., Beeville—Beeville Independent School Dist., John R. Beasley, Pres., Bd. of Trustees, contemplates bond election.

Tex., Brownwood—City voted refunding bonds.

Tex., Beaumont—Sewer—City, Paul H. Millard, Mgr., plans selling \$11,000 bonds; R. C. Black, City Engr.

Tex., Mont Belvieu—School—Barbers Hill Independent School Dist. voted \$100,000 bonds.

Tex., Nacogdoches—City, R. C. Monk, Secy., receives bids Aug. 22 for \$50,000 5% street bonds.

Tex., Pampa—Road—Gray County defeated \$3,500,000 bond issue. 7-24

Tex., Weimar—City voted \$50,000 bonds; \$42,000, sewer; \$8000, fire truck.

W. Va., Mason—Wagner, Hartford and Mason School Districts, Mason County, voted \$40,000 school bonds.

Bond Issues Sold

Ala., Phenix City—Davies-Bertram Co., Cincinnati, purchased \$34,000 paving bonds at 97.16. 7-24

Ark., Newport—Bd. of Commrs., Street Improvement Dist. No. 14, T. P. Umstead, Secy., sold \$56,000 5½% \$1000 and \$500 denomination paving bonds to W. B. Worthen Co.,

Little Rock, at 98.3 and accrued interest.

Fla., Jacksonville—Duval County Bd. of Public Instruction purchased \$44,000 5% special school tax Dist. No. 1 bonds embracing Jacksonville and South Jacksonville for \$42,588.

Fla., Jacksonville—Jacksonville Special Tax School Dist. No. 1 sold \$44,000 5% bonds to Duval County Bd. of Public Instruction, at discount of \$1,412.

Fla., Pensacola—Escambia County, Langley Bell, County Clk., receives bids at once for \$180,000 6% coupon toll bridge bonds. 7-24

Ga., Lafayette—Robinson-Humphries Co., Atlanta, purchased Lookout Mountain Consolidated School Dist. No. 2 bonds at \$29,111 and accrued interest.

Miss., Hattiesburg—City Comsn. sold \$300,000 5¼% water bonds to Assel, Goetz & Moerlein, Inc., Cincinnati, at par, accrued interest and premium of \$3,783.

Miss., Jackson—Hinds County Bd. of Suprs. sold \$100,000 4¼% \$1000 denomination courthouse bonds to Otis & Co., Cleveland, Ohio, at \$1230 premium.

Miss., Jackson—City sold \$237,564, 5% paving bonds to Hibernia Bank, New Orleans, La., at par.

Miss., Jackson—Courthouse, Jail—Hinds County Bd. of Suprs. sold \$100,000 4¼% \$1000 denom. Series D bonds to Otis & Co., Toledo, at \$1,230 premium. 7-31

Miss., Rosedale—Refunding—Bolivar County Bd. of Suprs., P. B. Woollard, Clk., sold \$100,000 bonds to Saunders & Thomas, Memphis, Tenn. 7-24

Mo., Jefferson City—City Council sold \$50,000, 6% revenue bonds to Commerce Trust Co., Kansas City.

N. C., Dobson—Surry County Commrs. sold \$72,000, 4¼% coupon bonds to First Detroit Co., Detroit, at \$152 premium; T. M. Marsh, Clk. 7-17

N. C., Greensboro—Guilford County sold \$15,000, 3¼% short term notes to Morris Plan Bank of Greensboro.

N. C., Louisburg—Franklin County sold \$230,000, 4¼% tax anticipation notes to E. J. Coulton & Co., New York, at \$92 premium. 7-24

N. C., Mt. Airy—Surry County, McDaniel Lewis, Greensboro, sold \$72,000 4¼% school bonds to First Detroit Company, Detroit, Mich. 7-24

Okla., Arapaho—Custer County sold \$900,000 road bonds to American First Trust Co., Oklahoma City, First Trust Co., Tulsa, and C. Edgar Honnold, Oklahoma City.

Tex., Woodville—Road—Tyler County Commrs. Court sold \$64,000 Chester Precinct bonds to H. C. Burt & Co., Houston, at par.

West Virginia—State Bridge Comsn., Charleston, sold \$1,900,000 bonds to syndicate composed of Walter, Woody & Helmerdinger, Well, Roth & Irving Co., both Cincinnati; Caldwell & Co., Nashville, Tenn.; Kent, Grace & Co., John Nuveen & Co., and A. C. Allyn & Co., all Chicago, Ill. 7-24

New Financial Corporations

Fla., Miami Beach—City Bank of Miami Beach opened with Richardson Saunders, Pres. of City National Bank of Miami, as Pres. 7-24

La., Houma—Terrebonne Securities Corp., capital \$75,000, chartered; Chas. A. Ledet, Everett J. Richard.

La., Jeanerette—St. Paul Bourgeois, Inc., capital \$125,000, chartered; St. Paul Bourgeois, Pres.; Sidney Bourgeois, Sec.; general investment.

La., Minden—Bank of Minden & Trust Co., capital \$60,000, chartered; R. H. Miller, Chmn.; A. B. Hardeman, Sec.; formerly Bank of Minden.

Md., Baltimore—United Bankers, Inc., chartered; Robert O. Bonnell, Pres., 110 Overhill Rd.; R. G. Plummer, Treas.

Mo., Clayton—Clayton Investment Co., capital \$50,000, chartered; J. Thomas Wright, Glencoe; Charles F. Elme, Kirkwood; J. H. Schaedler, Clayton.

Mo., St. Louis—Mae Investment Co., capital \$25,000, chartered; H. A. Dailey, 317 N. 11th St.

W. Va., Kimball—Kimball National Bank, chartered; W. B. Stevens, Pres.; D. J. M. Cook, Cashier.

Branch Banking & Trust Co., H. D. Bate-

man, Pres., Wilson, N. C., opened branch in New Bern, N. C.; R. E. Harris, V.-Pres., will be in charge.

First National Bank of Daytona Beach, E. F. Thames, Cashier, plans changing name to First Atlantic National Bank of Daytona Beach, Fla.

Seguin State Bank and Trust Co., H. H. Weinert, Pres., purchased Farmers State Bank of Seguin, George Hagan, Pres., both Seguin, Tex.; Max Starcke, Trust Officer; assets over \$1,500,000.

Sullivan Machinery Sales Increase.

Invoiced sales of the Sullivan Machinery Company, Chicago, for the first six months of the current year, are expected to show a slight increase over the corresponding period in 1929, although definite figures are not now available. This is said to be due largely to carry-over into the year of a good volume of unfilled orders. Earnings for the first half of 1930 promise to compare favorably with earnings for the first half of 1929; while prospects for the third quarter remain doubtful, it is anticipated that increased activity in the final quarter will make that period compare favorably with the last quarter of 1929.

\$1,051,000 Beaumont Bonds

Sold

Beaumont, Tex.—Municipal construction is expected to become active in Beaumont, following the sale of \$1,051,000 of 4½ per cent city bonds to George L. Simpson & Co., Inc., Dallas, and Eldredge & Co., New York, at 94.5. With a deduction of \$146,000 to refund notes and \$57,805 for discount, there will remain \$847,195 for expenditure on eight improvement items.

Retail Credit Losses

Bad debts represented 1.2 per cent of installment sales of 10,992 retail establishments of all kinds in 1927, according to summary tables published with Part III of the Domestic Commerce Division's National Retail Credit Survey. Average credit loss on open-credit sales was 0.6 per cent. Because of the much larger volume of open-credit than installment sales, however, bad debts on open-credit sales represented a higher percentage of total sales, 0.3 per cent, than those on installment-credit sales, 0.2 per cent.

Part III of the National Retail Credit Survey contains, besides these summary tables, a detailed analysis of the credit situation in 12 types of retail stores. This is available from the Superintendent of Documents, Washington, D. C.

St. James Parish School Board, Donaldsonville, La., called an election for August 28 on a \$300,000 bond issue to build high schools.

**Bankers, Manufacturers, Merchants,
of the South**

When in Baltimore, drop in and see us.
Maybe we can serve you in some way. The
acquaintance may prove mutually helpful.

BALTIMORE COMMERCIAL BANK

GWYNN CROWTHER, President

26 South Street, Baltimore, Md.

Capital and Surplus \$1,350,000

Member Federal Reserve System

WE extend the facilities of our organization to those desiring information or reports on companies with which we are identified.

**Electric Bond and
Share Company**

Two Rector Street

New York

Corporate Financing Arranged

Mergers and Reorganizations Effected
Capital furnished for both new and old enterprises

WILLIAM AKERS

Long Distance and Local Phone Walnut 3186

1314-15 Atlanta Trust Co. Bldg.

ATLANTA, GEORGIA

W. O. GAY H. D. MONTGOMERY G. C. DEMOREST

MUNICIPAL NOTES

COMMERCIAL PAPER
COLLATERAL LOANS

W. O. GAY & CO.

Est. 1894

27 William Street, New York

53 State Street, Boston

1418 Walnut Street, Philadelphia

YOUNG & SELDEN COMPANY

MANUFACTURING

Bank and Commercial Stationers

BALTIMORE, MD.

**WE PURCHASE ISSUES OF SPECIAL ASSESSMENT BONDS
AND ADVANCE FUNDS TO RESPONSIBLE CONTRACTORS
ACCOUNT CONSTRUCTION COSTS SUCH ISSUES**

CORRESPONDENCE WITH US INVITED

S. G. GARRAWAY & COMPANY

208 SO. LA SALLE ST. - CHICAGO, ILLINOIS

THE OSCAR T. SMITH & SON CO.

Manufacturing

BANK AND COMMERCIAL STATIONERS

407-9-11 E. Saratoga Street

BALTIMORE, MD.

CHARACTER

QUALITY

— SERVICE —

We Buy Bonds

City, County, School and Road from
Municipalities and Contractors

WRITE

THE PROVIDENT SAVINGS BANK & TRUST CO.

CINCINNATI

OHIO

Delaware Corporations
Forms, Law and Pointers

Estimates of Cost Furnished Without Cost

DELAWARE REGISTRATION TRUST CO.

100 West Tenth Street
Wilmington, Del.

J. Ernest Smith, President and General Counsel.
Chas. Warner Smith, Vice-President.
Harry W. Davis, Secretary and Treasurer.

AT YOUR SERVICE IN BALTIMORE

**MARYLAND
TRUST COMPANY**

Northwest Corner
Calvert and Redwood Streets

MEMBER FEDERAL RESERVE SYSTEM

ELECTRIC SERVICE FOR RURAL VIRGINIA

Company Expending \$2,000,000 to Carry Out Big Program

Richmond, Va.—Marked progress has been made so far this year by the Virginia Electric & Power Co. in extending its transmission lines into rural sections. The present program of the company in this direction, which will extend into 1931, will involve an expenditure of \$2,000,000. Of this amount, more than \$700,000 had been expended up to July 1 for building transmission lines and making 119 extensions which will serve approximately 1450 rural customers and a number of small towns. Work planned for the remaining six months of the current year involves line construction and 129 extensions to serve approximately 1500 customers and additional towns, estimated to cost \$560,750.

Extensions out of Richmond include 33,000-volt lines to Midlothian and Powhatan and to the State Farm at Goochland and a 57-mile line to Tappahannock. A 13,500-volt line will be extended 5 miles west from Goochland and 8 miles south to Rock Castle, and on the Tappahannock line a 33,000-volt line is being extended east to King William Courthouse, while from the King William extension a 4-mile line is being constructed across the Mattaponi River to serve Walkerton. A 4-mile extension has been completed along the Osborne turnpike and lines have been extended into Ellerson, 6 miles northeast of Richmond. Upon the completion of the King William extension on the Tappahannock line, an 11-mile extension will be built out of Tappahannock to serve Center Cross and Bowler's Wharf.

Lines have been constructed from Stony Creek to serve Carson and Jarratt in the Petersburg district and extensions have been completed to Dinwiddle, DeWitt and McKenney. A 13,200-volt line will be built from the Hopewell substation through Prince George Courthouse and Burrowsville to Cabin Point, a distance of 28 miles, and in the Williamsburg district a 13,200-volt line was recently completed between Toano and Providence, while three other extensions are being made, namely, to Old Forge Road, Magruder and Five Fork. When these are completed other lines are expected to be extended from the Providence Forge line to Charles City Courthouse.

A 33,000-volt line is under construction to Dahlgren in the Fredericksburg district to serve the United States Proving Ground, the line tapping the new Diatom line at King George Courthouse. Other extensions soon to be built include a 13,200-volt line to Spotsylvania Courthouse; a 33,000-volt line from the Diatom

plant to Marden's store, and a 13,200-volt extension to Maple Grove. In the Norfolk district, the company recently leased from the Norfolk-Southern Railroad Company transmission and distribution lines serving Princess Anne County and Virginia Beach, adding about 2200 retail customers and affording an opportunity for further development in this community. The company also purchased the distribution system in Windsor. Extensions now under way include an 11,000-volt line to Churchland; 33,000-volt extension from Elizabeth City to Belle Cross, and a 13,200-volt extension from Elizabeth City to South Mills, N. C. A 33,000-volt line has been tapped at Oranoke between Edenton and Elizabeth City and a 16-mile extension is being completed to serve Weeksville, N. C. An 11,000-volt line is being extended north from Suffolk to serve the community of Drivers.

In the Carolina district, the towns of Jamesville, Leggetts, Everetts, Columbia and Plymouth have been added to the company's service. Upon the completion of a 34-mile line from Plymouth to Columbia, with necessary substations, service will be available to Roper and Creswell. Other towns to be served will be Speed, Margarettsville, Darden and Coefield.

With the extension of lines, power facilities have been enlarged, particularly through interconnections with other companies. On July 1 an interconnection was completed with the Carolina Power and Light Co. near Roanoke Rapids, N. C., at a cost of \$350,000. Other interconnections have also been made, all of which are expected to contribute to the reliability of service and economy of operation.

Rugs From Southern Fibre Plants

George W. Carver, negro scientist and director of Tuskegee Normal and Industrial Institute, Tuskegee, Ala., has been experimenting with Southern fibre plants for the manufacture of rugs. Dr. Carver is a "trail blazer" in the investigation and development of peanut, sweet potato and clay by-products in the South, and he now states that he has been extracting fibre, and has produced 10 or 15 rugs which are claimed to have an Oriental appearance. One rug recently finished was from the fibre obtained from cotton stalks.

Bids will be opened September 3 in the office of the Constructing Quartermaster, Fort George G. Meade, Md., to erect 12 sets of officers' quarters and 6 sets of non-commissioned officers' quarters.

Charlotte Building Increasing

Charlotte, N. C.—Building construction here has shown an increase recently, while an improvement in the real estate situation, particularly in the construction and sale of residences, is encouraging. Three brick veneer residences were recently completed by the Home Real Estate & Guaranty Co., S. T. Henderson, president, and all of them have been sold. This company will begin the construction of two additional dwellings at once. Masten & Frederickson are building five or six brick veneer residences on Beverley drive and it is understood that four of them have been sold. Twelve residences valued at \$10,500 to \$12,500 each have also been built on Malvern road within the past 18 months, according to a member of this firm. Plans are being made by N. O. McDowell for the construction of a minimum of 40 dwellings this year. He plans a development in one section of the city for whites and one in another section for negroes. Mr. McDowell will become president of the Real Estate Exchange, Inc., when that firm is organized.

Work Progressing on \$4,000,000 Tampa Plant

Tampa, Fla.—Dredging in connection with an island, causeway and channel has been completed by the American Cyanamid Co., New York, preparatory to beginning actual construction on a \$4,000,000 super-phosphate plant on Hillsborough Bay. A 16-inch dredge has been in continuous operation for nearly a year clearing a channel 3500 feet long, 27 feet deep and 150 feet wide at the bottom, extending from the Government channel to the island. The island which is 1800 feet long and 800 feet wide is connected to the mainland by a causeway more than 4000 feet in length. A dock has been constructed of No. 4 Larsen steel sheet piling made by Sheet Piling, Inc., New York, the dock being 9 feet above mean low tide. A turning basin has been dug at the dock, offering 1300 feet of mooring space. Dredging was done under the supervision of Earle E. Baird, company engineer. A crew of workers will now begin leveling the causeway preparatory to laying rails and building a highway from the mainland to the island, where work will soon be started on the plant. The latter will be equipped with elevators, storage and facilities to ship raw phosphate rock to other plants of the company and elsewhere. It will be equipped also to manufacture by-products. J. A. Mortland is the engineer in charge. The Gulf Construction Co., New Orleans, La., constructed the dock.

\$2,500,000 University Building Program

Nashville, Tenn.—A building program inaugurated by the University of Tennessee in 1927 with a legislative provision for the expenditure of \$2,500,000, is nearing completion. The legislative appropriation was divided into five yearly bond issues. Four buildings costing more than \$1,000,000 have been completed; three are nearing completion, and plans have been completed for two others. Initial construction included a pharmacology building and the C. P. J. Mooney memorial library building on the Memphis campus, and science and home economics buildings at the junior college of agriculture and home economics at Martin. Chemistry, physics and geology buildings were erected on the Knoxville campus and a new engineering building is nearing completion, while a \$300,000 library is expected to be completed next summer. The 1930 program covers a \$300,000 alumni memorial gymnasium, the Austin Peay memorial administration building, on which construction will probably start this fall. The former will be convertible into an auditorium to seat 4500. The present library will be remodeled into an administration building and another wing added. A tentative program for 1931 calls for a \$250,000 biological building, \$90,000 infirmary, addition to the practice house and moving dairy buildings across the Tennessee River to Cherokee Farm. A three-story women's dormitory costing \$150,000 is also nearing comple-

tion, funds for this having been provided by a special act of the Legislature authorizing the university to issue its own notes.

Convention of Industrial Engineers

The July-August Bulletin of the Society of Industrial Engineers, Chicago, Ill., outlines the program of the 17th national convention of the Society to be held at the Mayflower Hotel, Washington, D. C., October 15, 16 and 17. The general theme of the convention will be "Industrial America," with papers and discussions on related subjects.

\$3,000,000 Building Plans

Oklahoma City, Okla.—Preliminary plans of Weary & Alford, Chicago, have been accepted by the First National Bank & Trust Co. for a proposed 32-story bank and office building here to cost about \$3,000,000. Drawings and specifications will be completed about the latter part of October and contract is expected to be awarded around the first of December. Separate contracts will be awarded in the meantime for excavation, foundation and retaining walls and much of this work will probably be completed before general contract is awarded. The bank will occupy 80,000 square feet of space, leaving 250,000 square feet of rental space for offices. Construction will be of steel and concrete.

Tennessee Electric Power Company Carrying Out \$8,000,000 Program

Chattanooga, Tenn.—Construction expenditures of the Tennessee Electric Power Co. and its subsidiaries for the first half of the current year amounted to \$3,782,543 as compared with \$2,319,269 for the corresponding period of 1929. At the beginning of 1930 the company announced appropriations of \$7,000,000 for development work, but by July 1 the amount had been increased to \$8,000,000. Projects soon to be started embrace 57 miles of line from Waynesboro to Lexington and 30 miles of circuit from Murfreesboro to Franklin. Aside from the construction program of the company, its running expenses for the year will exceed \$8,000,000, it is estimated, in the way of wages, taxes, materials and supplies and items of maintenance and upkeep. As of July 1, the company's payroll carried the names of 3078 employees, 325 more than were employed at the same time in 1929. For the year ended June 30, 1930, current consumption by customers amounted to 664,931,574 kilowatt-hours as compared with 600,836,418 kilowatt hours for the previous year. A total of 118,865 electric meters was in service on July 1 of this year, an increase of 1626 since January 1, and 316 communities were being served as compared with 287 at the first of the year.



BOND ISSUES

PROPOSALS

BUILDINGS

PAVING

GOOD ROADS



Bids close August 22, 1930.

U. S. Engineer Office, Mobile, Ala.—Sealed bids, in duplicate, subject to the conditions contained in the specifications, will be received until 11 o'clock A. M., August 22, 1930, and then publicly opened, for furnishing all labor and materials and performing all work of maintenance dredging in the Mississippi Sound Channel at Pascagoula, Miss., to a depth of 17 feet and a width of 150 feet, involving the removal of approximately 1,500,000 cubic yards of material, including overdepth. Further information on application.

Bids close August 21, 1930.

U. S. Engineer Office, Mobile, Ala.—Sealed bids, in duplicate, subject to the conditions contained in the specifications, will be received until 11 o'clock A. M. August 21, 1930, and then publicly opened, for furnishing all labor and materials and performing all work of maintenance dredging, involving the removal of approximately 3,600,000 cubic yards of material, including overdepth from Gulfport Ship Channel and Anchorage Basin, Miss. Further information on application.

GENERAL INFORMATION

About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday.
FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible.

THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close September 2, 1930.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., August 4, 1930.—SEALED PROPOSALS will be opened in this office at 3 p. m. Sept. 2, 1930, for furnishing all labor and material required for furnishing and installing new brass water piping in the U. S. court house and post office at Charleston, S. C. Drawings and specifications may be obtained from the custodian at the U. S. court house and post office at Charleston, S. C., or at this office, in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close August 28, 1930.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., July 17, 1930.—SEALED BIDS will be opened in this office at 3 p. m., August 28, 1930, for the construction of the U. S. post office and court house (except elevators) at Ed Dorado, Ark. Drawings and specifications, not exceeding six sets, may be obtained at this office, in the discretion of the supervising architect, by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. JAS. A. WETMORE, Acting Supervising Architect.

Bids close August 21, 1930.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., July 25, 1930.—**SEALED PROPOSALS** will be opened in this office at 3 p. m., August 21, 1930, for furnishing all labor and material required for furnishing and installing new brass water piping, etc., in the U. S. court house, post office, etc., at Macon, Georgia. Drawings and specifications may be obtained from the custodian at the U. S. court house at Macon, Georgia, or at this office, in the discretion of the supervising architect, JAS. A. WETMORE, Acting Supervising Architect.

Bids close August 25, 1930.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., August 1, 1930.—**SEALED PROPOSALS** will be opened in this office at 3 p. m., August 25, 1930, for furnishing all labor and material necessary for furnishing and installing wiring and apparatus for a fire alarm system, a watchman's report and time recording system and a time clock system in the department of commerce building, Washington, D. C. All prospective bidders are hereby notified that any bid submitted in response to this advertisement must be accompanied by a statement of facts in detail of the business and technical organization of the bidder available for the contemplated work, including financial resources and building experience, etc. The United States expressly reserves the right to reject any bid in which the facts as to business and technical organization, financial resources, or building experience, compared with the project bid upon, justify such rejection. The successful bidder will be required to furnish a performance bond of 50% of the contract price. Drawings and specifications may be obtained from this office, JAS. A. WETMORE, Acting Supervising Architect.

Bids close September 15, 1930.

Bridges

KENTUCKY STATE HIGHWAY DEPARTMENT DIVISION OF CONSTRUCTION

Frankfort, Ky., August 6, 1930.

Sealed bids will be received by the State Highway Commission at its office, Frankfort, Kentucky, until 2 P. M. on the 15TH day of SEPTEMBER, 1930, for the construction of OHIO RIVER BRIDGE AT MAYSVILLE.

One main suspension span 1960 ft., two side spans 465 ft. each; Kentucky approach: one 78 ft. steel girder span and four 58 ft. steel girder spans; Ohio approach: one 78 ft. steel girder span, five 58 ft. steel girder spans and one 61 ft. steel girder span; concrete anchors, piers, abutments and retaining walls.

Bids will be received on the complete work or separately as follows:

- (1) Concrete substructure, piers, abutments and retaining walls.
- (2) Steel superstructure.

KENTUCKY RIVER BRIDGE AT BOONESBORO

Eight 50 ft. concrete girder spans, two 140 ft. steel truss spans, one 250 ft. steel truss span and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

- (1) Concrete superstructure and substructure.
- (2) Steel superstructure.

BRIDGE OVER TENNESSEE RIVER NEAR PADUCAH

Three 400 ft. steel truss spans, ten 100 ft. plate girder spans, one 60 ft. plate girder span, twelve 46 ft. I-beam spans, four 45 ft. I-beam spans and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

- (1) Concrete substructure.
- (2) Steel superstructure.

CUMBERLAND RIVER BRIDGE AT SMITHLAND

One 500 ft. steel truss span, twelve 100 ft. steel plate girder spans, one 46 ft. I-beam span, one 34 ft. I-beam and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

- (1) Concrete substructure.
- (2) Steel superstructure.

Further information, plans, bidding proposals, etc., will be furnished upon application to the Frankfort Office.

Blueprints of this work will be on file for inspection only at the District Engineer's headquarters.

The right is reserved to reject any and all bids.

THE STATE HIGHWAY COMMISSION.
By BEN JOHNSON,
Chairman.

Bids close September 10, 1930.

Bridges

KENTUCKY STATE HIGHWAY DEPARTMENT DIVISION OF CONSTRUCTION

Frankfort, Ky., August 6, 1930.

Sealed bids will be received by the State Highway Commission at its office, Frankfort, Kentucky, until 2 P. M. on the 10TH day of SEPTEMBER, 1930, for the construction of OHIO RIVER BRIDGE AT ASHLAND. Center span, 739 ft. steel truss span, two side spans, 431 ft. steel truss spans, two 156 ft. steel truss spans, one 72 ft. plate girder, one 46 ft. 5 in. I-beam and eight 30 ft. I-beam spans, steel bents and towers, reinforced concrete piers and abutments and fill approaches.

Bids will be received on the complete work or separately as follows:

- (1) Concrete substructure with fill approaches.
- (2) Steel superstructures, bents and towers.

GREEN RIVER BRIDGE AT SPOTTSVILLE

One 360 ft., one 161 ft. and four 116 ft. steel truss spans, two 50 ft. reinforced concrete spans and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

- (1) Concrete superstructure and substructure work.
- (2) Superstructure—Steel.

BRIDGE OVER CUMBERLAND RIVER AT BURNSIDE

One 291 ft., two 200 ft. and two 126 ft. steel truss spans and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

- (1) Concrete substructure.
- (2) Steel superstructure.

Further information, plans, bidding proposals, etc., will be furnished upon application to the Frankfort Office.

Blueprints of this work will be on file for inspection only at the District Engineer's headquarters.

The right is reserved to reject any and all bids.

THE STATE HIGHWAY COMMISSION.
By BEN JOHNSON,
Chairman.

Bids close September 9, 1930.

Reinforced Concrete Bridge

Knoxville, Tenn.

Sealed bids for the construction of a reinforced concrete bridge over the Tennessee River at Henley Street, in the City of Knoxville, Tennessee, will be received by the City of Knoxville, Tennessee, at the office of George R. Dempster, City Manager, until 11 o'clock A. M. September 9, 1930, at which time they will be publicly opened and read.

The bridge will consist of one 165-ft. 0-in. arch span, one 183-ft. 0-in. arch span, one 200-ft. 0-in. arch span, two 212-ft. 0-in. arch spans, one 297-ft. 0-in. arch span, six 50-ft. 0-in. deck girders, walls, abutments and piers, grading and paving of approaches, paving of bridge, installation of water mains, links to support gas mains, telephone conduits and manholes, power conduits and manholes, lighting system for bridge and approaches, with independent system for channel lights and flood lighting system, all as shown on the plans and described in the specifications. The bridge roadway shall be 54 feet between curbs and with a 6-foot sidewalk provided on each side.

Plans and specifications can be examined at the office of the City Manager or the Director of Public Service of the City of Knoxville, Tennessee. Plans, specifications and proposals may be secured upon the payment of \$25.00, which amount will not be refunded.

All proposals must be made out on the forms printed in the specifications and must be accompanied by a certified cashier's check in the amount of \$50,000.00, drawn on a Tennessee National Bank, and made payable to the City of Knoxville, Tennessee, without recourse.

The successful bidder will be required to furnish a construction bond in a sum equaling the amount of the contract, signed by a Surety Company now having a duly authorized representative in the City of Knoxville, Tennessee. The right is reserved to accept or reject any or all proposals and to waive informalities.

(Signed) GEORGE R. DEMPSTER,
City Manager of Knoxville, Tennessee.
W. W. MYNATT,
Director of Public Service.

Bids close August 19, 1930.

Timber Jetties

DEPARTMENT OF PUBLIC WORKS STATE OF MARYLAND STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building jetties as follows:

Worcester County, Contract No. Wo-85-15—Proposed timber jetties at Ocean City, Maryland, one to be built at approximately North Second Street and one to be built approximately at North Fourth Street.

Will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M., E. S. T., on the 19th day of August, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 5th day of August, 1930.

G. CLINTON UHL, Chairman.
L. H. STEUART, Secretary.

Bids close August 26, 1930.

Virginia Highway Work

Richmond, Va.

Tuesday, 10 A. M., office of the Va. Dept. of Highways, Richmond, Va. Rt. 19, Proj. 622, Fluvanna County, 7—40 ft. Conc. Beam Spans and 1—105 ft. Low Steel Truss Span, Cu. Yds. A Conc. 778.4, Reinf. Steel 134.520, Struct. 118,800. Rt. 39, Proj. 633, County, Elizabeth City, 3.4 Mi. Conc. Sq. Yds. Conc. 23,215, Cu. Yds. Excava. 11,509, Reinf. Steel 2036. Rt. 502, Proj. 651, 10 Mi. MAC. OR GRAVEL, Cu. Yds. MAC. OR GRAVEL 21,571, Cu. Yds. Excava. 72,172, Lbs. Reinf. Steel 19,746. Rt. 39, Proj. 668A, Warwick County, 2 Mi. Conc. Sq. Yds. Conc. 21,125, Cu. Yds. Excava. 3635, Lbs. Reinf. Steel 1700. Rt. 10, Proj. 497, County Pulaski, 6.8 Mi. Bit. Material, furnishing, hauling and applying 100,000 gals. Bit. Mat. Details obtainable upon request.

Bids close August 19, 1930.

Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS STATE OF MARYLAND STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building two sections of State Highway as follows:

Harford County, Contract H-98-44—One section of State Highway along the Bush's Corner-Pennsylvania State Line Road from the end of Contract H-74 to the Pennsylvania Line, a distance of 1.23 miles (concrete).

Queen Anne's County, Contract Q-60-24—One section of State Highway from the Eastern Shore Boulevard to Queens-town, a distance of 0.65 mile (penetration macadam).

Will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M., E. S. T., on the 19th day of August, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 5th day of August, 1930.

G. CLINTON UHL, Chairman.
L. H. STEUART, Secretary.

Bids close August 14, 1930.

Paving

Richmond, Va.
SEALED PROPOSALS WILL BE RECEIVED AT THE OFFICE OF THE DIRECTOR OF PUBLIC WORKS, RICHMOND, VA., UNTIL 3 O'CLOCK P. M. AUGUST 14, 1930, for the construction of approximately 10,000 sq. yds. spall paving on concrete base and approximately 12,000 sq. yds. sheet asphalt or Warrentite Bitulithic Paving on concrete base.

Form of Proposal, Plans and Specifications can be obtained on application.
A charge of \$5.00 will be made for these plans, etc., which sum will not be refunded.

A CERTIFIED CHECK for the amount stated on proposals must accompany each bid as a guaranty of execution of contract. The Director of Public Works reserves the right to reject any and all bids.

R. KEITH COMPTON,
Director Public Works,
City Hall.

Bids close September 2, 1930.

**Sewage Disposal Plants
Intercepting Sewers**

Spartanburg, S. C.
Sealed proposals will be received by the Spartanburg Metropolitan Commission at the office of the Commission in Spartanburg, S. C., for the construction of two Sewage disposal plants and two intercepting sewers for the Spartanburg Metropolitan District until 10 o'clock A. M., Tuesday, September 2nd, 1930, at which time the proposals will be publicly opened and read.

The contemplated improvements are as follows:

A 3 million g. p. d., mechanically operated, separate sludge digestion disposal plant with sprinkling filters on Fairforest Creek;
A 1½ million g. p. d., mechanically operated, separate sludge digestion disposal plant without sprinkling filters on Lawsons Fork;
An intercepting sewer on Fairforest Creek

7.4 miles in length, pipe sizes from 15 to 36 inches;

An intercepting sewer on Lawsons Fork and connecting outfalls totaling 12.4 miles in length, pipe sizes from 8 to 27 inch.

The proposals will cover all material, mechanical equipment and labor necessary to construct the plants and sewers complete, except the sludge pumps, chlorinators, deep well pumps, venturi meter and elevated tanks.

Plans are divided into four major sections as outlined above and bidders should only request plans for those sections in which they are interested.

Plans and specifications are on file for inspection in the office of the Commission and the office of the Engineer. Plans and specifications may be secured for the purpose of making up a bid by application to the Engineer, accompanied by a deposit of twenty-five (\$25.00) dollars. Upon return of plans and specifications in good condition within two weeks after proposals are received, a return will be made to each depositor in the amount of his deposit less the cost of blue printing and postage.

The Commission reserves the right to reject any and all bids, or any part of a bid, or to award to a bidder any part of the work as it may deem best for the interest of the District.

Each proposal must be accompanied by a certified or cashier's check, made payable to the Spartanburg Metropolitan Commission, in the amount of five (5%) per cent of the bid. The bidders to whom contracts are awarded shall be required to furnish, for faithful performance of the work under this contract, an approved Surety Bond in the amount of one hundred per cent of the contract price.

THE SPARTANBURG METROPOLITAN COMMISSION.

THOMAS H. DANIEL, Chairman.
F. GENTRY HARRIS, Secretary.

HARRISON FERGUSON.

THE HARWOOD BEEBE COMPANY,
Engineers,
Spartanburg, S. C.

Bids close August 21, 1930.

Sewerage Improvements

Salisbury, N. C.

Sealed proposals will be received by the Mayor and City Council of the City of Salisbury, N. C., until 11 A. M. August 21, 1930, at the City Hall in Salisbury, N. C., for Sewerage Improvements as follows:

Laying and Completing Approximately 13,000 ft. of 8" Terra Cotta Pipe Sewers.

Laying and Completing Approximately 1800 ft. of 10" Terra Cotta Pipe Sewers.

38 Brick Manholes Complete.

8 Brick Flush Tanks Complete.

Proposals must be marked "PROPOSALS FOR SEWERAGE IMPROVEMENTS." All bids must be made on blank forms provided in copies of the Proposal, Contract and Specifications, enclosed in sealed envelope and addressed to the Mayor and City Council of the City of Salisbury, N. C.

Copies of the Plans, Specifications, Form of Proposal, Contract, etc., may be obtained from the City Manager.

Bids for Construction Work will be received only from contractors licensed under the Laws of North Carolina.

The right is reserved to reject any or all bids, or to award contract or contracts, which in the opinion of the City Manager, the Mayor and Council appear to be for the best interests of the city.

J. L. FISHER,

Mayor.

P. P. PILCHER,

City Manager.

To cover the cost of printing, blueprinting, etc., a deposit of \$8.00 will be required for drawings and specifications, one-half of which will be returnable to unsuccessful bidders upon return of drawings and specifications in good condition.

CLASSIFIED OPPORTUNITIES

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES**FOR SALE**

GRAVEL AND LAND—Three locations, on A. C. L. and S. A. L.

R. B. LANCY, Cheraw, S. C.

MEXICO TIMBER, oil, grazing and agricultural tracts to suit; 152,000 acres, improved, on Railway Coahuila state; two-year oil lease should equal price asked.

WELLSFORD, Laredo, Texas.

FOR SALE—Large water power at sacrifice to quick buyer. Beautiful 170-acre lake. Factory buildings, warehouse, large yard. For further particulars address

CHAS. VAUGHN (Owner), Glen Rock, Pa.

FOR SALE—5000 acres oil and gas leases on structure, settled production. Royalties and mineral rights on large tract. Complete data furnished on request.

W. P. HARLEY, Bowling Green, Ky.

TIMBER AND TIMBER LAND

LARGE ACREAGE second-growth pine timber near Jacksonville, Florida, for sale at bargain price. Other large tracts in Southeast Georgia. The James D. Lacey Company, Barnett Bldg., Jacksonville, Fla.

FARM, FRUIT AND TRUCK LANDS**LOUISIANA**

ST. CHARLES PARISH, LOUISIANA, offers opportunities in cattle ranches, agricultural and industrial sites. St. Charles Bank & Trust Co., Sellers, La.

VIRGINIA

APPLE ORCHARD 15,000 TREES—Best commercial varieties, 12 years old; fine condition. Many excellent buildings and big equipment machinery and stock. Sacrificed to settle estate for \$40,000; easy terms. WILDER & Co., Charlottesville, Virginia.

Rates, Terms and Conditions

RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to a line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract:

100 lines 28c a line
300 lines 26c a line
500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

FARM, FRUIT AND TRUCK LAND**VIRGINIA**

FOR SALE—Fancy Stock Farm, 217 acres, Shenandoah Valley, Lee Highway, View National Park. Price \$80,000.

R. S. BURKHOLDER, Waynesboro, Va.

SOUTHERN ESTATE

FOR SALE—Beautiful Colonial Estate; ideal winter and all year round climate. MRS. ISABELLE R. BELL, "Bellemont Park," Mount Olive, North Carolina.

FOR SALE—11-acre estate on St. Johns River opposite Jacksonville, Fla., also 12-room residence in good location, only few blocks from business center of Jacksonville. A. G. Chappell, P. O. Box 392, Jacksonville, Fla.

SOUTHERN HOMES

OVER 500 ACRES, spring, brook, log cabin, many long leaf pines. Estate preserve. Fine fish pond "full of fish." Low acreage price. G. F. ARCHER, Aiken, S. C.

SOUTHERN HOMES

In the best city in the Carolinas. \$10,000 to \$75,000, according to size and location.

F. C. ABBOTT & CO.,
Charlotte, N. C.

32 years in Charlotte Real Estate.

FARM, FRUIT AND TRUCK LANDS**VIRGINIA****SOUTH ISLES PLANTATION**

830 acres, 450 acres farming and pasture land, about 300 acres fertile river bottoms, balance woodland and timber. Large, attractive mansion in grove of several acres handsome box wood, shrubbery, flowers and many varieties of trees. Excellent stock barn, tenant house, hog sheds and other outbuildings. Near Lynchburg in good community. Price \$44,000. Full details and illustrated catalogue of other attractive places upon request.

GEO. V. VENABLE & CO., Lynchburg, Va.

BUSINESS AND INVESTMENT PROPERTIES

11,000 ACRE tract prospective oil and gas land in heart of Winter Garden District, Dimmit County, Texas. Soil adapted to culture, commercially, of dates, oranges and other citrus fruits; at investment prices. If interested, Owner, Box 656, Houston, Tex.

BUSINESS OPPORTUNITIES

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

WANTED—A few reliable parties to join us in the organization of a company to manufacture farm machinery. References exchanged. Box 551, Jackson, Tenn.

WANTED—LIVE YOUNG MAN as partner in well-established, good paying poultry business. Must have some capital and come well recommended. A chance of a lifetime to party accepted.

BOX 1200, STUARTS DRAFT, VA.

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

FOR SALE

On Jackson Street, opposite St. Charles Hotel, 170 ft., with 2-story, 8-room home, \$6500; 62 ft. on Hendry Street, including Undertaking Building, \$7500, or all for \$12,900 cash.

P. JOHN HART REALTY CORP.,
P. O. Arcade,
Fort Myers, Fla.

FINANCIAL

MONEY WANTED

6, 7 and 8% Mortgage Loans on City, Town or Country property. Southern Land & Investment Co., Baton Rouge, Louisiana.

INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO.,
Woolworth Building New York City

DEVELOPING AND ENGINEERING

ORGANIZING—DEVELOPING—ENGINEERING

Engineering firm, widely experienced in investigating, organizing, developing, designing and supervising construction, solicit correspondence regarding development or extension of meritorious projects and existing industries, power plants and utilities. Address No. 8016, care Manufacturers Record.

INDUSTRIES WANTED

WELL-LOCATED Southern town wants industry. Will furnish plant, moving expenses, additional capital and other concessions.

INDUSTRIAL SERVICE CORP.,
Asheville, N. C.

INDUSTRIAL PLANTS

FOR SALE—Brick plant with output three to four million brick annually. This is a going business. Price \$40,000.00. Terms one-half cash, balance 6%.

L. A. WALKER, Summerville, S. C.

COMPLETE WOODWORKING PLANT, suitable for furniture or other wood articles. Dry kiln, side track, with ample trained labor available. Can be bought for less than one-half reproduction value. First Securities Company, Chattanooga, Tenn.

FOR SALE

Home Industry Iron Works, consisting of Foundry, Machine, Boiler and Blacksmith Shops and Real Estate. Located at Mobile, Ala., on the Louisville & Nashville Railroad, near river front. Plant is one of the best in Mobile. Will sell at a bargain. Address MRS. A. KLING, 254 North Jackson Street, Mobile, Ala.

FACTORY SITES

FACTORY SITE
ON DEEP WATER

If you are seeking an ideal deep water industrial location in Baltimore, Maryland, on one of the finest harbors in the world, see advertisement on page 94, July 17th issue of the Manufacturers Record.

W. S. CAHILL CO.,
Key Highway and Webster Street,
Baltimore, Md.

PATENT ATTORNEYS

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

FREE "PATENT PARTICULARS" Sterling Buck, over 23 years Registered Patent Attorney Prompt and thorough services. Suite M 629 F, Washington, D. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 600-4, Barrister Building, Washington, D. C.

PATENT ATTORNEYS

PATENTS—TRADEMARKS—COPYRIGHTS Charlotte office convenient to South. PAUL B. EATON, Registered Patent Attorney, 218 Johnson Building, Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

AGENCIES WANTED

SALES REPRESENTATIVE—Large and valuable acquaintance with foundries, stove manufacturers, Coal mines and supply houses in entire South wishes immediate connection; salary or commission. Highest references. Address W. J. BACH, 1139 So. 14th Street, Birmingham, Ala.

REPRESENTATIVES WANTED

IF YOU HAVE a following among steam boiler operators and are not afraid to work you can make good money by selling our Boiler Compounds on commission basis. We make water analysis and guarantee results on our Water and Metal Treatments. Write for particulars.

SOUTHERN PRODUCTS CORPORATION,
New Orleans, La.

SITUATIONS WANTED

THOROUGHLY TRAINED ACCOUNTANT; fifteen years experience in all phases of accounting, now engaged in public practice, but desires change; 35 years of age, married, Christian; highest recommendations as to ability and character; the man you have been seeking; prefer Southeast; salary open. P. O. Box 184, Atlanta, Ga.

MEN WANTED

WANTED—Salesman experienced in selling lumber or creosoted wood products. Give experience and education. Address No. 9032, care of Manufacturers Record.

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty years. Send only name and address for details.

R. W. BIXBY, INC.,
103 Downtown Bldg. Buffalo, New York



RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



FOR SALE AT A BARGAIN

6—200 H.P. 72" x 20', Walsh & Weidner H.R.T. Boilers. 84—4" tubes. 130 lbs. steam pressure allowed by Hartford Steam Boiler Co. Will be sold singly, in pairs or the entire lot.

Can Be Seen in Operating Condition

TENNESSEE EASTMAN CORPORATION

—OWNERS—

Kingsport, Tenn.

BOILERS
FOR SALE

25 Steam Boilers. Several Water Tube Boilers, ranging in sizes from 200 H. P. to 400 H. P. Several Return Tubular Boilers ranging in sizes from 125 H. P. to 150 H. P. Can be seen in operation.

No Reasonable Offer Will Be Refused.

ATLANTIC ICE & COAL CO.

ATLANTA, GEORGIA

SATISFACTION

ALBERT PIPE SUPPLY CO., INC.

NEW-RECLAIMED-USED

PIPE

ALL SIZES CUT TO SKETCH AND STOCKED

BERRY & NORTH 13th STS. BROOKLYN, N.Y.

GUARANTEED

SERVICE

PRICES

PIPE

Re-threaded, reconditioned, guaranteed, suitable for all practical purposes, furnished with new threads and couplings, 400,000 feet in all sizes from 24" to 1/2".

Also large stock of spiral pipe, sizes 7", 10", 12", 14", 20" and 24".

Large stock of valves and fittings, screwed and flanged. Can make attractive prices.

MARINE METAL & SUPPLY CO.
167 South St., New York City

PIPE NEW

SECOND HAND
Overhauled and Tested
New Threads and Couplings
Established 1904

Albert & Davidson
Pipe Corp.

Second Ave., 50th-51st St., Brooklyn, N.Y.
Telephone Sunset 1900



Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

CENTRAL PIPE & SUPPLY CO.
Box 1099 Charleston, W. Va.

Second Hand and New **PIPE** Overhauled, Re-threaded and Coupled
Wrought Iron

Also Cut to Sketch

Greenpoint Iron & Pipe Co., Inc.
187-197 Maspeth Ave. Brooklyn, N. Y.

8" Galvanized Corrugated Pipe

6000 ft. 8" NEW GALVANIZED CORRUGATED pipe in lengths 16 to 20 ft. suitable for exhaust drains, water systems, sewers, etc. Have the necessary connecting sleeves. Price considerably under the market.

2000 ft. 12" Naylor black asphalted spiral welded slip joint pipe, slightly used.

MARINE METAL & SUPPLY CO.
167 South Street New York City

RANDLE

OFFERS BIG BARGAINS IN

Used and Rebuilt Engine Generator Sets, Turbo Generator Sets, Motors, Rotary Converters, Generators, Motor Generator Sets, Engines, Boilers, Steam and Electric Machinery of all kinds, also Machine Tools. Send for our new machinery list. Yours for the asking. Established 50 years

The RANDLE
MACHINERY CO.

1734 Powers St., Cincinnati, Ohio

FOR SALE CHEAP

5-300 HP B & W BOILERS built for 200 lb. steam pressure, equipped with Murphy hand fired stokers and Foster super heaters; will sell with or without stokers, at a fraction of cost or new boilers.

HERFURTH ENGINE & MACHINERY CORP.
Duke, Strand, Union Sts. Alexandria, Va.

If you want to get
SOUTHERN business
advertise in the
MANUFACTURERS RECORD
BALTIMORE, MD.

NEW AIR TOOLS AT 1/2 PRICE

13 size B. "Thor" air motor metal drills (cap'y. up to 2")
48 size C. "Thor" air motor metal drills
20 size 42 "Thor" air motor metal drills
9 size — "Thor" air motor metal drills (Cap'y. up to 9/16")
11 size BW "Thor" air motor metal drills (Cap'y. up to 2")
15 size 8 "Thor" air motor close corner metal drills.
14 4X "Little Giant" air motor metal drills.
12 2X "Little Giant" air motor metal drills.
80 No. 60 "Killer Master" riveting hammers, also several other makes and sizes.

These are absolutely brand new tools on which we will save you 50%.

W. M. SMITH & COMPANY
Box 1709 Birmingham, Ala.

BOILER FOR SALE

1-125 HP Stanwood, down draft, boiler. Used two (2) years. Al condition. Bargain.

Address Box 137
Decatur Alabama

ECONOMIC BOILERS

A. S. M. E.

1-150 H.P. Erie City—125 lb. pres.
1- 80 H.P. Erie City—125 lb. pres.
1- 25 H.P. Erie City—100 lb. pres.

M. J. HUNT'S SONS

1620 N. Delaware Ave., Philadelphia, Pa.

300 HP!!

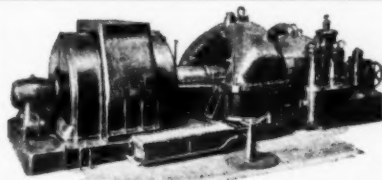
300 h.p., 450 r.p.m., 3 ph., 60 cy., 2200 volt General Electric Type I, Form M. 3 bearing slip ring motor with 2.26 to 1 ratio Link Belt silent chain drive, primary and secondary control for starting duty.

Just one of many items listed in our Bulletin No. 38

72 illustrated pages of ROCKFORD REBUILT power plant equipment.

Send for your copy, mailed free on request.

Rockford Power Machinery Co.
620-626 Sixth St., Rockford, Ill.



10,000 KVA Turbo typical of 4 units recently delivered and similar to the following.

PRACTICALLY NEW 100% INTERNAL EXCELLENCE WESTINGHOUSE CONDENSING TURBO UNITS COMPLETE—INSTANT SHIPMENT

1-15,000 KW CW-218 Frame—1800 RPM
1-10,000 KVA CW-118 Frame—1800 RPM
1-7,500 KW CW-78 Frame—1800 RPM
1-5,500 KVA CW-76 Frame—3600 RPM
1-4,000 KVA CW-76 Frame—3600 RPM
1-1,700 KVA CW-28 Frame—3600 RPM
1-1,500 KVA CW-16 Frame—3600 RPM (3 phase, 60 cycle, standard voltage)

A.S.M.E. CODE DESIGN BOILERS 200-225 lbs.

2-1500 H.P. Cross Drum B & W
2-2650 HP Ladd Bent Tube
1-827 HP Stirling Plant, modern stokers, auxiliaries

5-504 HP B & W Vertical Steel headers, et al.
CONDENSERS MOTOR GENERATOR SETS

Verification and proof of new equivalent condition easily reached on personal inspection
50% to 200% saving an investment

Send us list of your requirements—or what you have for sale

COME TO CINCINNATI



Low Cost Long Life UNEXCELLED SERVICE

Three strong factors that have kept Gregory HI-GRADE-REBUILT MOTORS and Electrical Machinery in the lead since 1893.

Before buying consult Gregory's 80-page illustrated Monthly Bargain Sheet. It will save you Money, Time and Worry. Thousands of buyers have proved to their own satisfaction and profit that it pays to buy

GREGORY HI-GRADE-REBUILT
Electrical Machinery

Write, phone or wire



Gregory
Electric
Company

1601 S. Lincoln St., Chicago

FOR SALE

Ridgway Turbo-Generator
500 kw. direct connected exciter, 60 cycles, 3 phases, 440 volts. Cost \$18,000, used 15 months, excellent condition. Readings on request, price \$6,000.

L. B. SMITH, INC.
Camp Hill, Cumberland County, Penna.

FOR SALE

2-Skinner Unaflo Engines, direct connected to 2-200 KW Crocker Wheeler DC Generator Sets, 125 to 250 volts, 3 wire with panel, sets are as good as new. Priced at a bargain. Send for full details.

Consolidated Products Company, Inc.

335 Doremus Avenue, Newark, N. J.
Mulberry 0600

Ask Us For A List of Customers For Each Of Whom We Have Rewound Over 1000 TRANSFORMERS

We sell, buy and repair only transformers. All work guaranteed
A. I. E. E. standard. Low prices. Prompt Service. Reliability.



The **ELECTRIC SERVICE CO. Inc.**
America's Used Transformer Clearing House
212 Walnut Street Cincinnati, Ohio



We buy modern type transformers—any size—any quantity.
Wanted especially—high voltage large capacity transformers in carload shipment.

REFRIGERATING MACHINERY FOR SALE

20 Ammonia Compressors, steam driven with either
simple corliss, tandem compound, cross compound.
Some have horizontal ammonia compressors, others
have vertical ammonia compressors, ranging in
sizes from 50 to 500 tons refrigerating capacity.

No Reasonable Offer Will Be Refused.

ATLANTIC ICE & COAL CO.
ATLANTA, GEORGIA

GENERATOR SETS

2—50 KVA, 220 volt, 3 phase, 60 cycle Ridgeway Generators, direct connected
to Ridgeway Engines.
1—500 KW, 2300 volt, 3 phase, 60 cycle Turbo Generator set with condenser.

BOILERS

2—500 H. P. Heine Water Tube, 100 lbs. pressure, A.S.M.E. code.
2—180 H. P. Keeler water tube, 200 lbs. pressure, A.S.M.E. code.
1—150 H. P. 72" x 18' Hor. ret. Tubular, 150 lb. pressure, A.S.M.E. code.

HEATERS

2—1000 H. P. Cochran open type Feed Water Heaters.

METAL WORKING TOOLS

No. 4 Hilles & Jones single end punch belt drive, 36" throat, cap. 1 3/4" x 1".
No. 3 Southwark single end punch, 24" throat arch jaw, motor drive, cap.
3/4" x 3/4".
1 to 4" Oster pipe machine belt and motor drive.
8' Covington squaring shear 1/4" cap.
2000 lb. Chambersburg double frame steam forging hammer.
1000 lb. Niles Bement Pond single frame forging hammer.
No. 1 Nazel belt driven hammer cap. 2" x 2".
3—5/8" Johnson horizontal boring mill table type.
No. 2 Berwick electric rivet heater, 1/4" cap.

THE O'BRIEN MACHINERY CO.
113 North Third Street Philadelphia, Pa.

H. R. T. BOILER

100 H.P. 66" x 16' Ames. ASME
Code. 125 lbs. pressure. Butt
Strapped, Triple Riveted.

DELTA EQUIPMENT CO
148 N. Third Street Philadelphia, Pa.

FOR SALE

1—No. 3 American Molder Machine, Serial No.
524694—7" Capacity; Direct connected to 20
HP Motor, 3 ph, 60 cy, 220 V.

MARYLAND PIPE & STEEL CORP.
Ostend and Scott Sts. Baltimore, Md.

REAL BARGAINS—New—Never Used—Diesels.
2—200 HP DeLaVergne, Horizontal Full Diesels,
suitable for belt or direct connected service,
at less than half regular cost.
2—86 HP Focs, 2 cyl. Vertical complete Diesel
Power Units, with radiator cooling equipment,
etc., at exactly 1/3 regular cost.

ZELNICKER IN ST. LOUIS
Rails, Equipment, Machinery, Tanks, Sheet
Steel Piling, Pipe, Etc.

RAILROAD AND CONTRACTORS' EQUIPMENT

SHOVELS or CRANES

FOR SALE or RENT
RENTAL PAYMENTS MAY APPLY ON PURCHASE

1—Lorain 75-A, combination shovel and
clamshell. Purchased new September,
1929. In almost new condition.
Located in Eastern Pennsylvania.
1—30-B Bucyrus steam dragline on
caterpillars equipped with 35-ft.
boom, 1 cu. yd. bucket. Machine
in excellent condition, priced for
quick sale. Located near Chat-
tanooga, Tenn.
1—Erie Type B steamer, 1 cu. yd.
dipper. This machine is in splen-
did condition and is reasonably
priced. Located in Central Tenn.
1—Insley Combination Clamshell and
back hoe 1/2 c. yd. capacity, gaso-
line power. In good operating con-
dition. This machine is a real bar-
gain. Located in Southern Tenn.
1—Type "D" 3/4 yard Thew steam
shovel center drive truck in splen-
did condition. Priced right. Can
be purchased on liberal terms.
Located at Brooklyn, New York.
We have both Steam and Gasoline Excavators ranging from 1/2 to 1 1/2 cu. yd.
capacity in various parts of the country that will be sold at extremely low
prices or leased with leased payments made applying on purchase price.

CHARLES F. COHEN

LIMA, O., OFFICE:
Lima Trust Bldg.
Tel. Main 4824

NEW YORK OFFICE:
2351 Graybar Bldg.
Tel. Lexington 9934

Write or Phone at My Expense

RAILROAD and CONTRACTORS EQUIPMENT

40 Standard and 36" Gauge Modern Direct-connected Locomotives, in
all types and weights from 8 to 75 tons.
10 Standard and 36" Gauge Geared Locomotives, all weights.
15 Steam Shovels and Locomotive Cranes of different types and sizes.
3000 Tons Relaying Rails, all sizes, on our Birmingham yards.
100 Sets 35 and 40-lb. Frogs and Switches; good as new.
Tie plates, track spikes and track bolts, immediate shipment from
Birmingham stock

Your inquiries will receive careful and prompt attention

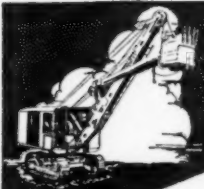
BIRMINGHAM RAIL & LOCOMOTIVE CO., Birmingham, Ala.

Our RESALE DEPARTMENT

presents opportunities each week to acquire
good used equipment. Get the habit of looking
it over every issue.

MANUFACTURERS RECORD
Baltimore, Md.

RAILROAD AND CONTRACTORS' EQUIPMENT



SHOVELS

1/2-3/4-1-1 1/4 and
1 1/2 yd capacity

CRANES

6-10-12-15-17 and
20 ton capacity



NORTHWEST'S

FACTORY REBUILT with NEW MACHINE GUARANTEE

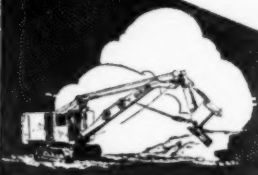
These machines have been completely rebuilt in our factory and carry the same guarantee as new equipment. Write or wire.

NORTHWEST ENGINEERING CO.

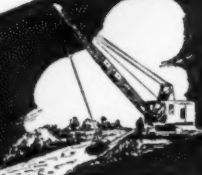
1833 Steger Building

Chicago, Illinois

U.S.A.



PULLSHOVELS



DRAGLINES

FLORIDA USED EQUIPMENT

P. & H. Shovel, Model 206 used less than 12 months and in new condition.

Koehring No. 1 crane, 45 ft. boom and clamshell, completely rebuilt.

P. & H. model 206 equipped as dragline.

Complete line used locomotives, cars, caterpillar tractors, road rollers, pumps, etc.

HEWITT-PHELPS MACHINERY CO.
20th St. and 4th Ave. So. St. Petersburg, Fla.
Phone (day) 46864, (night) 48084

FOR SALE OR RENT

2—Keystone Graders, Model No. 4.
1—10 ton Monarch 3 wheel Steam Roller.
1—5 ton Buffalo Tandem Steam Roller.
3—10 ton Buffalo Springfield Steam Rollers.
Large stock Rock Crushers, Screens and Elevators

JOHNSON & HOEHLER
Fernwood, Del. Co. Pennsylvania

RELAYING RAILS — SWITCHES TRACK MATERIAL

THE PERRY BUXTON DOANE CO.
Pennsylvania Bldg. Philadelphia, Pa.

RENTAL Contractors Equipment

Can Be
Had
By

Writing, Phoning or Wiring

J. R. CHRISTIAN CO.

603 West Building
HOUSTON, TEXAS

IDLE MACHINERY

Can be
Disposed of
by
Advertising
it in the

MANUFACTURERS

RECORD

Baltimore, Md.

Three miles 20 lb. Portable Track, one 7 ton Whitcomb Locomotive and Hatch Box Cars, all 24-in. gauge. Located in Virginia. Very attractive prices quoted to move quickly.

M. K. FRANK

1204 Clark Bldg., Pittsburgh, Pa. 220 East 42nd St. New York City

Rebuilt and Reconditioned EXCAVATORS

For Sale, or Lease With Option to Buy

Marion No. 32 1 Yard Steam Shovel on full crawlers. Ready for immediate delivery. An exceptional bargain, located at Pittsburgh.

P&H Model 400 3/4 yard Clamshell, 35 foot boom. Has been very carefully reconditioned. At Hoboken plant.

Bucyrus 31-B Steam Shovel. In excellent shape. At Hoboken plant.

P&H Model 400 Dragline, 3/4 yard, in good shape, ready to go. Located at Chicago plant.

Erie Gas-Air 1 yard Clamshell Crane. Looks and operates like new. At Chicago.

P&H Model 206 3/4 yard Shovel. Thoroughly overhauled and in very good operating condition. At Hoboken plant.

LIBERAL TERMS

Write or wire at our expense if you do not see what you want

EXCAVATING EQUIPMENT
DEALERS, INC.

EXCLUSIVELY EXCAVATING EQUIPMENT

Hoboken, N. J., 1706 Willow Ave.
Berkeley, Cal., 2657 Ninth St.
West Allis, Wis., 5905 Greenfield Ave.
Los Angeles, 2248 E. 37th St.
Chicago, Ill., 1040 W. Division St.

FOR SALE

Asphalt Plants,
Road Rollers,
Pavers,
Concrete Mixers,

Curb and Gutter and Road Forms
and miscellaneous paving equipment.

We solicit your enquiries for description and prices.

Southern Paving Construction Co.
Chattanooga Tennessee

FOR SALE

150-B Bucyrus Full Revolving
Stripping Shovel

WITH A LARGE LOT OF
REPAIR PARTS

This shovel is adapted for operation in sand or gravel plants, clay pits and coal stripping operations where it is desired to carry a high pace and when a large output is required.

In Perfect Condition

For Prices and Particulars Apply to

DURHAM LAND CO.

921 James Bldg. Chattanooga, Tenn.

From One Source

You can secure your entire steel requirements from Bethlehem — with the assurance that each item is as good and dependable as the facilities of a completely equipped organization with years of experience can make it.

BETHLEHEM STEEL COMPANY

General Offices: Bethlehem, Pa.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis.

Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu.

BETHLEHEM



Manufacturers of Rails, Frogs, Switches, for Permanent and Portable Track. Complete line of Steel Posts for Fence and other purposes.

Catalog will be sent on request

SWEET'S STEEL COMPANY
MANUFACTURERS
WILLIAMSPORT PENNA.

EASTON CARS



for every industrial purpose
Any type to your or our design
EASTON CAR & CONSTRUCTION CO.
10 E 40th Street, New York City, EASTON, PENNA.
PHILADELPHIA PITTSBURGH CHICAGO

INDUSTRIAL CAR EQUIPMENT



THE ATLAS CAR & MANUFACTURING CO.
Cleveland, Ohio

WHITCOMB LOCOMOTIVES

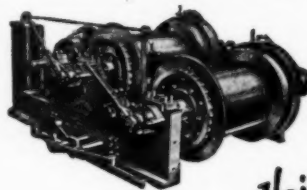
2 to 100 TONS
GEAR DRIVE AND OIL-ELECTRIC
GASOLINE - DISTILLATE - DIESEL - BATTERY
Write for Bulletin and Performance Data
GEO. D. WHITCOMB CO.
ROCHELLE, ILLINOIS

CARS KOPPEL TRACK

for all engineering and industrial uses
KOPPEL INDUSTRIAL CAR & EQUIPMENT CO.
NEW YORK CHICAGO
SAN FRANCISCO KOPPEL, PA. PITTSBURGH

STREET HOISTS

STEAM - ELECTRIC - GASOLINE



STREET BROS. MACHINE WKS. INC.

Chattanooga, Tenn.

Hoist's Derricks Cableways

If interested in

Hoists, Derricks, Cableways

or special equipment write for this book

"Your Own Success"

Good tools and good equipment are essential to success.
Lidgerwood machines have success built in them.

Lidgerwood Manufacturing Company

ELIZABETH, NEW JERSEY

Hoist and Derrick Headquarters
for 57 years.

There is nothing like CONTINUITY in Advertising

The decision to buy an automobile, a radio, an electric refrigerator, on the part of an individual is not made hastily.

A prospective manufacturer likewise does not hastily decide to locate in a new area, nor is a certain kind of machinery, equipment or product hastily determined upon.

The decision comes from a series of accumulated impressions.

Advertising frequency multiplies the impressions upon a prospective customer.

MANUFACTURERS RECORD
Baltimore, Maryland.



Why an Owen Stays Rigid

ALL RACK, wobble and side play are eliminated from the upper structure of an Owen Bucket. The one-piece steel crosshead and the four arms are constructed in the form of a "Double A" frame.

The upper arm connections are rigid: pinned in the crosshead on one side, and keyed to a long bolt which extends through a bushing in the crosshead on the other side. The bottom arm ends are also keyed to bolts which turn in case hardened steel bushings. Thus wear and play of arms is prevented.

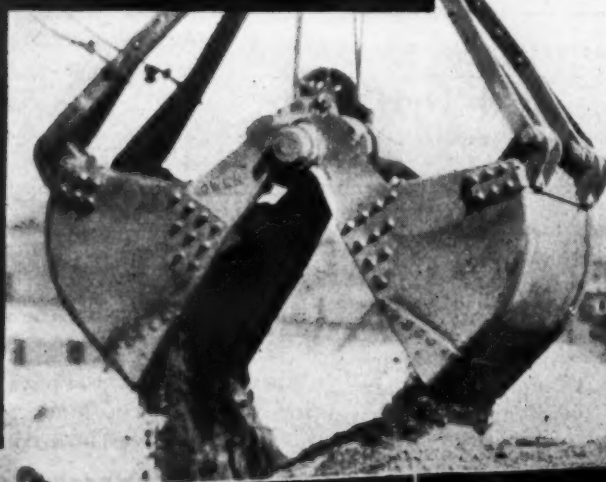
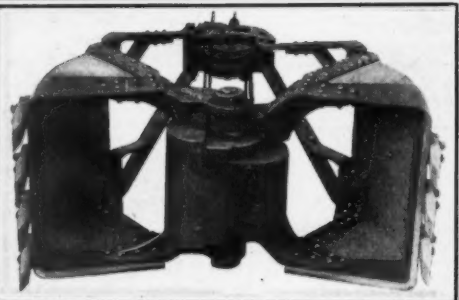
Write for a folder explaining and illustrating all of the Owen 17 Points of Leadership.

THE OWEN BUCKET CO.

6015 Breakwater Avenue
Cleveland, Ohio

17 POINTS OF LEADERSHIP

1. One-piece steel crosshead.
2. No wear in upper or lower arm ends.
3. Heavy high carbon steel arms.
4. Adjustable undiminished closing power.
5. Long life to sheaves and cable.
6. Long arm bolt bearings sealed from grit.
7. Lever type steel arm brackets.
8. Closing cable is protected against excessive wear.
9. Heavy shock-resisting renewable lips.
10. Cable clips eliminated.
11. Sealed center shaft bearings.
12. Greater digging power with no dead weight.
13. Penetration and clean dumping.
14. Dropping shocks absorbed, eliminating breakage.
15. Rigid shell construction.
16. Heavy duty high carbon drop-forged steel teeth.
17. Lips or teeth points hit first.



Owen Buckets

Some famous du

and the uses to which they are adapted
(A handy chart well

USES	"B" BLASTING POWDER	DURON	DU PONT EXTRA	RED CROSS EXTRA
Clay Mining	1st Deep Sprung Holes	1st	2nd D-H	1st
	(Underground)	3rd	1st	2nd 20% C-40% C
Excavating for Foundations	2nd Deep Sprung Holes Clay and Shale	2nd	3rd	1st 20% C-40% C
Gypsum Mining	0	2nd	3rd	2nd
Open Pit Mining	1st Deep Sprung Holes Soft Material	2nd	?	1st 20% C-60% C
Ore Mining (Underground)	0	3rd	2nd	2nd
Quarrying	2nd Tunnel Blasts	2nd Soft Limestone	1st Shale and Soft Limestone	1st Shale and Soft Limestone Also Tunnel Blasts
Roads and Railroads	1st Deep Sprung Holes Soft Material	?	?	1st 20% C-60% C
Salt Mining	0	1st	1st	3rd
Tunnels and Drifts	0	0	?	3rd

1st, 2nd, 3rd, 4th—Order of preference. 0—Should never be used.

The chart shown above is designed to help you select explosives which will give the best results in proportion to costs. Eight well-known du Pont explosives . . . and the chief kinds of blasting to which they are adapted . . . are given in the table. There are other

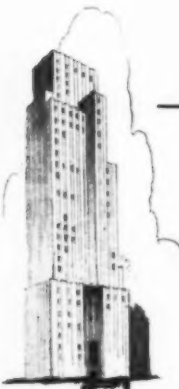
du Pont explosives that can be used for some of the blasting work mentioned, but these eight give an excellent coverage for the particular fields.

When you specify du Pont explosives for the jobs you undertake, you specify explosives into whose mak-

ing has gone more than a century and a quarter of experience. With du Pont explosives you are assured of satisfactory execution. For each du Pont explosive has been made, after thorough chemical research and study, to do the most efficient work in the blasting operation for which it is intended.

E. I. DU PONT DE NEMOURS & CO., Inc.

Explosives



Pont explosives

*other than coal mining and agriculture
worth your saving)*

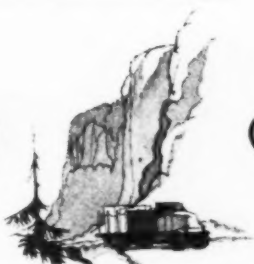
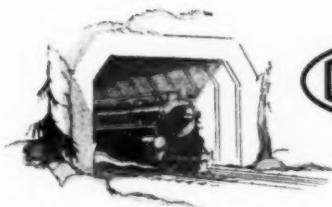
DU PONT GELATIN	DU PONT SPECIAL GELATIN	DU PONT QUARRY GELATIN	STRAIGHT DYNAMITE
?	?	?	?
?	?	0	?
2nd Rock Only	2nd Rock Only	2nd Rock Only	3rd Rock
1st-20%	1st-35%	0	1st-20% L. D.
?	3rd Wet Holes	3rd Wet Holes	3rd
1st	1st	0	4th
2nd Granite and Hard Limestone	2nd Granite and Hard Limestone	1st Granite and Hard Limestone	2nd Granite and Hard Limestone
2nd Very Hard Rock Only	2nd Very Hard Rock Only	1st Very Hard Rock Only	3rd
4th	?	?	?
1st	1st	0	?

?—Can be used but is not recommended.



REG. U. S. PAT. OFF.

Department WILMINGTON, DEL.



Quick facts about these eight du Pont explosives

"B" BLASTING POWDER. A deflagrating explosive made in seven standard granulations, of uniform size grains, and the railroad granulation which is a mixture of several sizes of grains. In material to which blasting powder is adapted it is probably the most economical explosive to use. Can be used only in dry work as it is readily affected by water.

DUROX. An ammonia dynamite of low density and high velocity. Fumes are good. Its high cartridge count . . . 160 sticks to the case . . . makes it economical to use. Suited for blasting salt, limestone and gypsum.

DU PONT EXTRA DYNAMITE. Low-density ammonia dynamite. Made in five types, all of them the same weight strength but varying in density and bulk strength. Strengths from 20% to 55%. Fumes are less objectionable than Red Cross Extra.

RED CROSS EXTRA DYNAMITE. Probably the most popular high explosive on the market. Made in strengths from 15% to 60%. 102 to 106 sticks to the case.

DU PONT GELATIN. Especially adapted for close work where ventilation is poor. Gives minimum of obnoxious fumes. Highly water resistant. Is plastic and loads solidly in bore holes.

DU PONT SPECIAL GELATIN is similar in most respects to du Pont Gelatin except that it is not quite so water resisting and not adapted for very wet work. Its fumes have a different flavor from du Pont Gelatin, but are no more obnoxious.

DU PONT QUARRY GELATIN. A type of gelatin dynamite developed especially for open work where the nature of the fumes is not important. It has same density, plasticity and water-resisting qualities as regular gelatins . . . and is stronger, grade for grade. Cannot be used in close work. Excellent for all kinds of outside work.

DU PONT STRAIGHT DYNAMITE. The type of high explosive from which all others are graded. Is the quickest acting and most sensitive of them all, is highly water resistant and is the best explosive for mudcapping and propagated shots. It is not adapted for use in sprung holes owing to its sensitiveness, nor in close work, as its fumes, especially in the higher grades, are likely to be too obnoxious.

All above explosives are low freezing

BLASTING ACCESSORIES. To fire the different explosives in the great variety of ways in which they are loaded requires efficient blasting accessories. The du Pont Company makes a complete line of these. Specify du Pont blasting accessories when you order explosives.

LANSING 3½-T MIXER

Large mixing drum, Hyatt Roller Bearings, Alemite fittings, Lauson 2 h. p. engine with Wico high tension magneto. **WRITE today for full information**

LANSING COMPANY
Lansing, Michigan

Latest Improved McLanahan Single Roll Crushers.

Simplicity — Power — Economy

Built in any capacities up to 1500 tons per hour, for any material.

Low power consumption—no feeders necessary on wet or dry materials—easily repaired. Crushes 100% of the time to desired size. Minimum of fines and dust. Steel or iron construction as desired.

Write for catalogs and information on Pit, Mine, Quarry and Industrial Equipment, washers, ore jigs, screens, dryers, hoists, etc.

McLanahan and Stone Machinery Co.
Hollidaysburg, Pennsylvania.

**KIESLER CLAM SHELL BUCKETS**

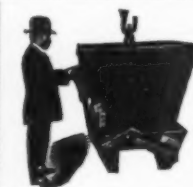
Send for latest catalogue

JOS. F. KIESLER CO.

932 W. Huron St. Chicago, Ill.

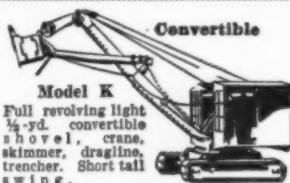
**Hayward Buckets**

A bucket for every digging and rehandling need . . . A size for every job.
THE HAYWARD CO., 90-92 Church St., N. Y.

**BOTTOM DUMPING and TURN-OVER BUCKETS**

Write us for information on Contractors Buckets

G. L. Stuebner Iron Works, Inc.
Manufacturers of Material Handling Equipment
So. Hancock St. Long Island City, N. Y.

**POWER SHOVELS**
Cranes, Trenchers
SKIMMERS

Full or part circle

BAY CITY SHOVELS, Inc.
Bay City, Mich.



KNOWN RELIABILITY!
Bucyrus-Erie equipment is known the world over, for dependable, low-cost operation. Shovels, Draglines, Cranes—all sizes—Gas, Diesel, Electric, Gas + Air, Diesel + Air, Steam. Also Railway Cranes, Spreader Plows, etc. *Write for bulletins.*

BUCYRUS-ERIE COMPANY
So. Milwaukee, Wis., Evansville, Ind., Erie, Pa.

Hydraulic Dredges
Dipper Dredges
Sectional Steel Hulls and Barges

American Steel Dredge Co.
Fort Wayne, Indiana U. S. A.



AMERICAN LIMESTONE COMPANY
KNOXVILLE TENNESSEE

CRUSHED LIMESTONE
Best for All Purposes

We manufacture all sizes of stone suitable for all classes of road building and concrete work where only a high-grade limestone is required.

Quarries opened up in 1912.

Capacity 4000 tons daily.

Quarries

Blue Ridge, Va. Pembroke, Va. Pounding Mill, Va.

W. W. BOXLEY & COMPANY

Room 711, Boxley Building, - ROANOKE, VA.

'You Can't go wrong in a Day'

IF YOU HAVE A CRUSHING OR GRINDING PROBLEM WRITE FOR INFORMATION ON 'DAY' PATENT HAMMER-MILL CRUSHERS

DAY PULVERIZER CO., KNOXVILLE TENN.

ELLCOTT MACHINE CORPORATION

Hydraulic Dredges—Sand and Gravel Dredges
Pumps for Sand, Gravel, Dredging
Hydraulic Dredging Machinery
Heavy Machinery

1111 Bush Street BALTIMORE, MD., U. S. A.



Has Always Given Good Service *says 25-Ton Gas Crane User*

The service which the maker builds into a crane is important, of course, but no more so than the service which he maintains on it.

It has always been the Industrial Brownhoist aim to not only build good cranes, but to stand back of them and help their owners get the biggest return on their investment. That we have succeeded is indicated by many statements like the following from the Apex Iron & Metal Co. of Chicago:

"We have been users of an Industrial Brownhoist Crane for the past four years and are very much satisfied with it.

"We have always been given good service.

"If we were to need another crane at this time we would not hesitate a moment in purchasing another Industrial Brownhoist."

Because of our steadfast adherence to the above policy, Industrial Brownhoist has built far more locomotive cranes than any other maker. These include Diesel, gas, electric and steam cranes of both the crawler and locomotive types. Capacities range from 6 to 200 tons and include the right size to do your work most economically.



Industrial Brownhoist Corporation, General Offices, Cleveland, Ohio

District Offices: New York, Philadelphia, Pittsburgh, Detroit, Chicago, New Orleans, San Francisco, Cleveland.

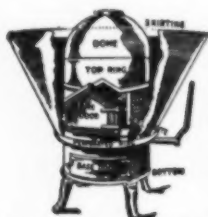
Plants: Brownhoist Division, Cleveland; Industrial Division, Bay City, Michigan; Elyria Foundry Division, Elyria, Ohio.

INDUSTRIAL BROWNHOIST

SAND DRYERS

(With or without External Gratings)

A portable machine, daily capacity 5 to 7 tons.



This dryer has a low first cost, is easily and cheaply operated and guaranteed dry sand.

The low cost makes it valuable for companies needing dry sand on two or more jobs at the same time, thereby eliminating the handling cost of one point only.

Write for descriptive pamphlet

The Ripley Foundry & Machine Co.
Ripley, Ohio

For Contractors, Railroads,
Trolley Lines, Coal Com-
panies, Industrial Plants,
Foundries.

We produce in quantities to meet your requirements

SAND and WASHED GRAVEL

QUICK shipments by rail from
Baltimore and North East, Md.
or in scow and barge lots. Truck or
rail shipments from Baltimore, Md.

The Arundel Corporation

MAIN OFFICE: ARUNDEL BUILDING
BALTIMORE, MARYLAND

Branches: New York, Norfolk and Miami

DRYERS

FOR ALL MATERIALS

AMERICAN PROCESS CO. Dodge Bldg., NEW YORK CITY
53 Park Place

SAND-GRAVEL-BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete
Roads and Buildings

Filter Gravel, all sizes—Building Bricks

FRIEND & CO., INC. River St., Petersburg, Va.

ASPHALT PLANTS

THE SIMPLICITY
SYSTEM COMPANY

CHATTANOOGA, TENNESSEE



for economy and perma-
nence in Road Building and
General Construction

WOODSTOCK SLAG CORP.

Southern Railway Bldg., Birmingham, Ala.

Perforated Metals SCREENS OF ALL KINDS

Chicago Perforating Co.

2445 West 24th Place
Tel. Canal 1450 CHICAGO, ILL.



No. 1

MANHATTAN
PERFORATED METAL CO., INC.

43 17-37th Street, Long Island City, N. Y.

PERFORATORS

of All Kinds of Metals for All Industries
Write for Copper, Brass, Tin, Zinc or
Aluminum Catalog



No. 7

No. 27



Perforated Metal Screens for every purpose

also elevator buckets MITCO Products—In-
of all kinds; chutes; terlocked Steel Grating;
hoppers; stacks and Shur-Site Stair Treads;
tanks. Armorgrids.

HENDRICK MANUFACTURING CO.

44 Dundaff St., Carbondale, Pa.

New York: 30 Church St.

Pittsburgh: Koppers Building

PERFORATED METALS HEADQUARTERS

Cotton Seed Oil Works a Specialty

Send for Samples

ERDLE PERFORATING CO. Rochester, N. Y.

PERFORATED SCREEN PLATES AND SHEETS

For Ores, Coal, Stone, Gravel, Cement, Sand, Clay, Cotton-Seed Oil Mills, Cotton
Gins, Phosphate Mines, Fertilizer Plants, Cyanide Works, Chemical Works, Etc.

Write for our New Catalogue

CHARLES MUNDT & SONS

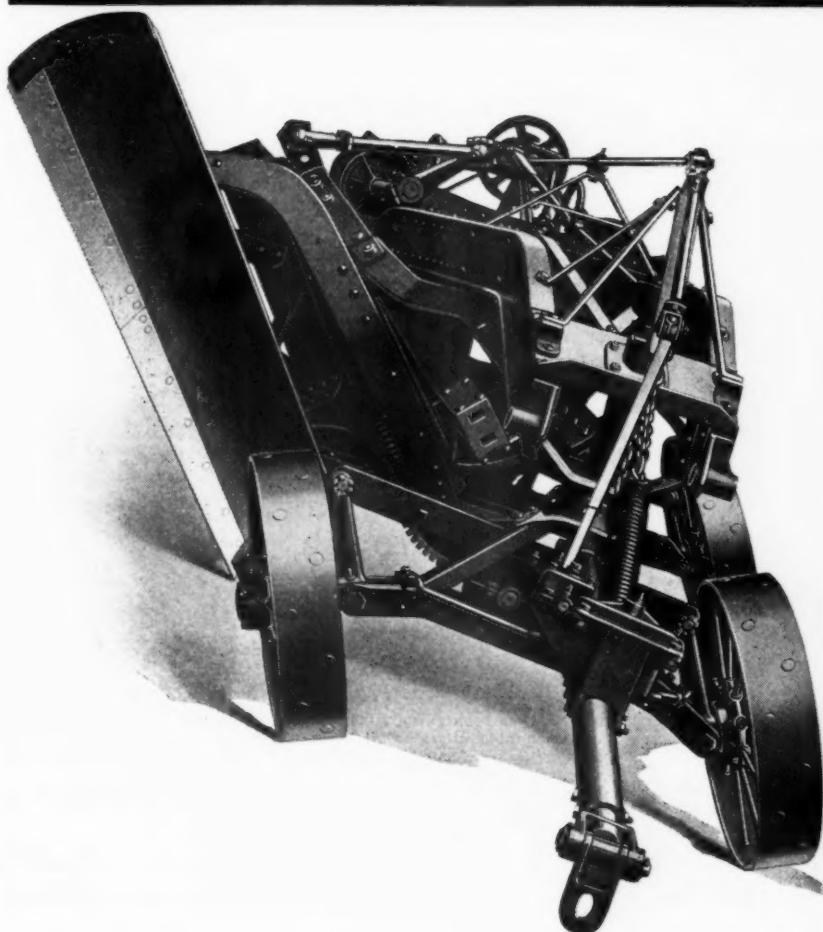
490 Johnston Avenue

JERSEY CITY, N. J.

Announcing the

"CATERPILLAR" SIXTY *Leaning Wheel* GRADER

Meeting Needs of Modern Roads



Wider grow the roads, deeper the ditches, better sloped the banks — Wider reaches the "Caterpillar" blade, deeper does it cut in the ditches, higher does it reach into the bank —

With these advantages comes the "Caterpillar" Sixty Leaning Wheel Grader.

Leaning Wheels.

3-Point Control to hold correct blade pitch advantage.

Ball and Roller Bearings on entire lift mechanism.

Bank Cutting Blade which cuts a 60 degree slope with a high reach of six feet six inches.

Compensating Spring Lift so mounted as to equalize tension on both ends of blade and exert uniform lifting force at any elevation of blade.

All Housed Gears Machine Cut.

Extensible Lift Links for greater reach.

Centralized Adjustment Controls.

60½-Inch One-Piece Structural Steel Circle.

Bronze Lift Gears, adjustable to six points of wear, running against machine-cut steel worm mounted on roller bearings.

One-Piece Carbon Steel Blade Beams riveted half way 'round the circle.

Four Vise-Like Screw Clamps that hold circle in their grip.

Nine-Inch Ship Channel Frame, weighing 28.6 pounds to the foot, reinforced.

42-Inch Lateral Side Shift.

Axle Spindles Drop Forged, heat-treated, chrome-nickel steel.

Tapered Roller Bearings in all wheels.

Tapered Cork Seals and Metal Guards to exclude dust from wheels.

Steel Wheels with Cast-In-Hub Spokes counter-sunk through tire.

Draft Direct to Blade . . . no draft applied to blade through frame.

Price

F. O. B. Minneapolis, Minnesota . . . \$1900

Caterpillar Tractor Co.

PEORIA, ILL. and SAN LEANDRO, CALIF., U.S.A.

Track-type Tractors : Combines : Road Machinery

(There is a "Caterpillar" Dealer Near You)

CATERPILLAR
REG. U.S. PAT. OFF.
TRACTOR

A GREAT AID-

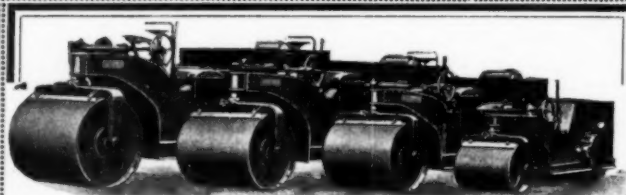
IN PROMOTING THE WELFARE
OF YOUR EMPLOYEES AND THE
CONSERVATION OF YOUR PROFITS.
THEY WILL GREATLY REDUCE SLIP
AND FALL ACCIDENTS IN YOUR
PLANT, AND ARE EXTREMELY DURABLE.

CENTRAL IRON & STEEL CO.
HARRISBURG, PENNA.
OFFICES IN ALL PRINCIPAL CITIES.



REG. U. S. PAT. OFF.
UNDERWRITERS' LABORATORIES INSPECTED S-A-443

CENTRAL "Knobby"
FLOOR PLATES Non-Skid



Buffalo-Springfield ROLLERS

Serve Faithfully Under ALL Conditions

In the case of a road roller, every hour lost is a serious matter—particularly on time contracts. With Buffalo-Springfields on the job, there is a sense of security in their reliability, exceedingly gratifying to the contractor, whether on maintenance or new construction.

Built in a wide range of weights and sizes, both three wheel and tandem, steam and motor driven.

Illustrated literature upon request.

The Buffalo-Springfield Roller Co.,
Springfield, Ohio



FLOOR NEVERSLIP PLATES

"The Plate with Perfect Diamonds"

AMERICAN PRESSED STEEL CO.

Commercial Trust Building—Philadelphia—Penn.

SAUERMAN "CRESCENT" SCRAPER



The World's lowest cost
long-range excavator.

Made in 15 sizes
to handle from 10 to 600
tons per hour.

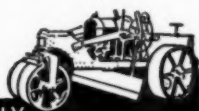
SAUERMAN BROS., INC.
400 S. Clinton St. Chicago

THE HUBER MANUFACTURING COMPANY
310 EAST CENTER ST., MARION, OHIO. Send for Catalog

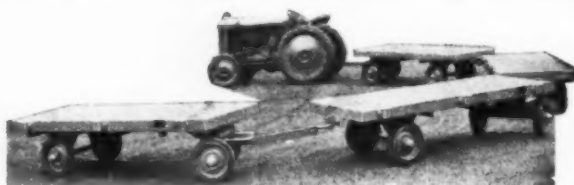
HUBER 4 CYL. MOTOR ROLLER

ACME ROAD MACHINERY COMPANY, FRANKFORT, N.Y.

ACME Tandem Rollers



ACME ROAD MACHY. CO. FRANKFORT, N.Y.



EWC TRAILERS are made for every industrial hauling purpose. Special trucks and trailers designed and built for individual requirements.

TRUCKS and WHEELS for mounting portable machinery of all kinds, any size and capacity.

TELL US your hauling problem and let us suggest the equipment for it.

ELECTRIC WHEEL COMPANY
5 Ohio Street QUINCY, ILL.

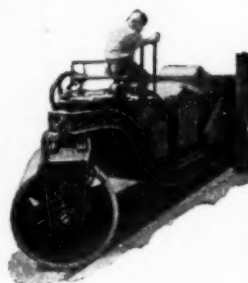
"No honeycombing— and a smooth even pavement"

Contractors write us that there's no sinking or bridging with an ERIE Roller.

The reason is plain: The ERIE compacts the asphalt uniformly because $\frac{2}{3}$ of the weight of this roller is concentrated over the compression roll.

Roll the job with an ERIE and your margin of profit is larger. Write today for Bulletin "M."

ERIE MACHINE SHOPS
Erie, Pa.



ERIE ROLLERS
GET THE ERIE ROLLER SAME ROAD QUALITY

Classified Reference Index for Buyers

ADHESIVE MATERIALS.

Carborundum Co., Niagara Falls, N. Y.

ACCOUNTANTS (Cert. and Cost.)

Black & Co., Baltimore, Md.
Ernst & Ernst, New York, N. Y.
Hollowell Gorham & Co. Greensboro, N. C.
Le Baron, E. T., Jacksonville, Fla.

AERIAL MAPS AND SURVEYS.

Airmap Corp. of Amer., Brooklyn, N. Y.
Lacey & Co., Jas. D., New York, N. Y.

AIR COMPRESSORS (Stationary and Portable.)

Chicago Pneumatic Tool Co., New York.
De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., New York, N. Y.
Novo Engine Co., Lansing, Mich.
O. E. Clute & Mch. Co., Columbia, Pa.
Quincy Compressor Co., Quincy, Ill.
Sullivan Machinery Co., Chicago, Ill.
Westinghouse Traction Brake Co., Wheeling, Pa.

AIR CONDITIONING SYSTEMS.

Skinner Bros. Mfg. Co., St. Louis, Mo.
Swartwout Co., Cleveland, Ohio.

AIRHEATERS.

Balcock & Wilcox Co., New York

AIRPORTS.

Shaw Co., Russell B., St. Louis, Mo.

ALUMINUM BRONZE POWDER.

Aluminum Co. of Amer., Pittsburgh.

AMMONIA Valves and Fittings.

Vogt Mch. Co., Henry, Louisville, Ky.

ANGLE IRON-WORKING MACHINERY.

Whitney Metal Tool Co., Rockford, Ill.

APPRAISERS.

Ballingier Co., Philadelphia, Pa.
Conard & Buxby, Burlington, N. J.
Main, Inc., Chas. T., Boston, Mass.

ARCHITECTS.

Ballingier Co., Philadelphia, Pa.
Bond, Geo. Harwell, Atlanta, Ga.
Chase, Wm. J. J., Atlanta.
Lindley, Claude H., Jackson, Miss.
Meln, Inc., Chas. T., Boston, Mass.
Milburn, Walter & Co., Wash., D. C.
Meyer Co., Tilghman, Allentown, Pa.
Simmons, Inc. & Associates, E. Stanley, Washington, D. C.
Frescher & Co., Inc., G. Lloyd, Atlanta.
Shrine & Co., J. E., Greenville, S. C.
Wheeler, Walter H., Minneapolis, Minn.
Widmer Engineering Co., St. Louis, Mo.

—(Golf Course, Landscape.)

Draper, E. S., Charlotte, N. C.
Spoon & Lewis, Greensboro, N. C.

ARCHITECTS' SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

ARCHITECTURAL BRONZE.

Chase Brass & Copper Co., Waterbury, Conn.

—Iron Work.

Dietrich Brothers, Baltimore, Md.
Virginia Bridge & Iron Co., Roanoke, Va.

ASH Removal Systems (Gates, Hoppers, Quenchers, etc.)

Allen-Sherman-Hoff Co., Phila., Pa.

—Sintering Systems.

Allen-Sherman-Hoff Co., Phila., Pa.

—Storage Tanks (Cast Iron.)

Allen-Sherman-Hoff Co., Phila., Pa.

ASPHALT.

Gulf Refining Co., Pittsburgh, Pa.

—Filler.

American Limestone Co., Knoxville, Tenn.

AUDITORS.

Black & Co., Baltimore, Md.
Ernst & Ernst, New York, N. Y.
Hollowell Gorham & Co. Greensboro, N. C.
Le Baron, E. T., Jacksonville, Fla.

BABBITT METAL.

Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

BACKFILLERS.

Austin Machinery Corp., Muskegon, Mich.
Harnischfeger Corp., Milwaukee, Wis.
National Equipment Corp. (Insley, Parsons), Milwaukee, Wis.

BALLAST (Railroad.)

American Limestone Co., Knoxville, Tenn.

BANKERS and BROKERS.

Provident Savings Bank & Trust Co., Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati, Ohio.

BANKS and TRUST COMPANIES.

Baltimore Commercial Bank, Balto., Md.
Bank of Alabama, The, Ensley, Ala.
Bank of New York & Trust Co., N. Y.
First and Merchants National Bank, Richmond, Va.
Maryland Trust Co., Baltimore, Md.
Mercantile Trust Co., Baltimore, Md.

BARGES (Steel.)

American Bridge Co., New York, N. Y.
McClintic-Marshall Co., Pittsburgh, Pa.

BARB (Steel, Rounds, Flats, Hexagons and Squares.)

Carnegie Steel Co., Pittsburgh, Pa.
Connellors Steel Co., Birmingham, Ala.
Gulf States Steel Co., Birmingham, Ala.
Knoxville Iron Co., Knoxville, Tenn.
Republic Steel Corp., Youngstown, Ohio.
Ryerson & Son, Inc., Jos. T., St. Louis, and New York.
Sweet's Steel Corp., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Timken Roller Bearing Co., Canton, Ohio.
Virginia Bridge & Iron Co., Roanoke, Va.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

BATTERIES (Storage.)

Electric Storage Battery Co., Phila., Pa.

BEAMS, CHANNELS, ANGLES.

Belmont Iron Works, Philadelphia, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

BEARINGS (Anti-friction.)

Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., Canton, Ohio.

—(Line Shaft.)

Wood's Sons Co., T. B., Chambersburg, Pa.

—(Roller.)

Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., Canton, Ohio.

BELT (Chain.)

Diamond Chain & Mfg. Co., Indianapolis.
Morris Chain Co., Ithaca, N. Y.

—(Leather, Canvas, Rubber.)

Charlotte Leather Belting Co., Charlotte, N. C.

Republic Rubber Co., Youngstown, Ohio.

—Dressing.

Dixon Crucible Co., Jos., Jersey City, N. J.

—Conveyors.

Barber-Greene Co., Aurora, Ill.

BENCH LEGS.

Angle Steel Stool Co., Plainwell, Mich.

—Drawers (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

BENCHES AND TABLES.

(Steel.)
Angle Steel Stool Co., Plainwell, Mich.

BILLETS (Basic Open Hearth.)

Gulf States Steel Co., Birmingham, Ala.
Republic Steel Corp., Youngstown, Ohio.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

BINS (Drill and Reamer.)

Angle Steel Stool Co., Plainwell, Mich.

—(Steel Loading.)

Blaw-Knox Co., Pittsburgh, Pa.

BLASTING POWDER and Accessories.

Du Pont de Nemours & Co., E. I., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.

BLINDS (Venetian and Awning.)

Wilson Corp., The J. G., New York.

BLOCKS (Chain.)

Harrington Co., The, Philadelphia, Pa.

—TACKLE for Wire and Manila Rope.

Patterson Co., W. W., Pittsburgh.

BLOWERS and Exhaust Fans.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.

BLOW PIPE SYSTEMS.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.
Skinner Bros. Mfg. Co., St. Louis, Mo.

BOILERS (New.)

Babcock & Wilcox Co., The, New York.
Charleston Dry Dock & Machine Co., Charleston, S. C.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cole Mfg. Co., R. D., Newnan, Ga.
Combustion Eng. Corp., New York, N. Y.
Hedges Walsh Welding Co., Chattanooga, Tenn.
Lambard Iron Works & Supply Co., Youngstown, Pa.
Oil City Boiler Works, Oil City, Pa.
Rundell's Sons & Co., D. Macdon, Titusville, Pa.
Titusville Iron Works Co., Titusville, Pa.
Vogt Mch. Co., Henry, Louisville, Ky.

—(Old.)

Babcock & Wilcox Co., New York

—(Stoker Unit.)

Oil City Boiler Works, Oil City, Pa.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.
O'Brien Machinery Co., Philadelphia, Pa.
Rundell Machinery Co., The, Cincinnati, O.
Zalkefer Supply Co., W. A., St. Louis.

BOILER SETTINGS.

Babcock & Wilcox Co., New York
Harrison-Walker Refractories Co., Pittsburg.

—Tubes.

Babcock & Wilcox Co., New York
Boiler Tube Co. of America, Pittsburgh.
National Tube Co., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—Tubes (Charcoal, Iron.)

Reading Iron Co., Reading, Pa.

BOLTS, Rivets, Studs, Washers.

Bethlehem Steel Co., Bethlehem, Pa.
Progressive Mfg. Co., Torrington, Conn.
Republic Steel Corp., Youngstown, Ohio.
Russell, Burdall & Ward Bolt & Nut Co., Fort Chester, N. Y.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Track.)

Sweet's Steel Co., Williamsport, Pa.

BOND BUYERS.

Garraway & Co., S. G., Chicago.
Hansell Bond Co., Inc., The, Chicago.
Law & Co., A. M., Spartanburg, S. C.
Mercantile Trust Co., Baltimore, Md.
Nuesen & Co., John, Chicago, Ill.

Provident Savings Bank and Trust Co., Cincinnati, Ohio.

Taylor, Wilson & Co., Inc., Cincinnati, Ohio.

BORING (Core.)

Mott Core Drilling Co., Huntington, W. Va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Saltville, Va.
Sprague & Henwood, Inc., Scranton, Pa.

BOXES (Paper.)

Old Dominion Box Co., Lynchburg, Va.

BRASS GOODS.

Chase Brass & Copper Co., Waterbury, Conn.
Copper and Brass Research Assn., New York.
Mueller Co., Decatur, Ill.

BRICK (Common Building.)

Friend & Co., Inc., Petersburg, Va.

—(Face.)

Alabama Clay Prod. Co., Birmingham.

—(Fire.)

Alabama Clay Prod. Co., Birmingham.
Cambria Clay Products Co., Blackfork, O.
Dee Co., Wm. E., Oak Hill, Ohio.
Taylor Sons Co., Charles, Cincinnati.

—(Vitrified, Paving.)

National Paving Brick Mfrs. Assn., Washington, D. C.

—and Clayworking Machy.

Steel & Sons, J. C., Statesville, N. C.

BRIDGE (Operating Machinery.)

Barrie Gear & Machine Co., Phila., Pa.

—Timber.

Amer. Crosscutting Co., Louisville, Ky.
Industrial Lumber Co., Elizabeth, La.
Kirby Lumber Co., Houston, Texas.

BRIDGES (Concrete.)

Atlantic Bridge Co., Greensboro, N. C.

—(Crested Wood.)

Atlantic Bridge Co., Greensboro, N. C.

—(Steel.)

American Bridge Co., New York, N. Y.
Atlantic Bridge Co., Greensboro, N. C.
Belmont Iron Works, Philadelphia, Pa.
Bristol Steel & Iron Works, Inc., Bristol, Va.
Champion Bridge Co., Wilmington, O.
Converse Bridge & Steel Co., Chattanooga, Tenn.
Ingalls Iron Works Co., Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.
Nashville Bridge Co., Nashville, Tenn.
Richmond Struct. Steel Co., Richmond, Va.
Virginia Bridge & Iron Co., Roanoke, Va.

BRONZE (Architectural.)

Heath Company, J. S., Waukegan, Ill.

—(Machine.)

Moccasin Brushing Co., Chattanooga, Tenn.

BUBBLERS.

Rundell-Spence Mfg. Co., Milwaukee, Wis.

BUCKETS (Clam Shell.)

Blaw-Knox Co., Pittsburgh, Pa.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Kiesler Co., Jos. F., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.

—(Dredging, Excavating, Sewer, etc.)

Hayward Co., The, New York, N. Y.
Moulton Mfg. Corp., Chicago, Ill.
Kiesler Co., Jos. F., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

—(Elevator.)

Hendrick Mfg. Co., Carbondale, Pa.
Webster & Waller Mfg. Companies, Chicago, Ill.

—(Orange Peel.)

Hayward Co., The, New York, N. Y.

—(Ore Handling.)

Hayward Co., The, New York, N. Y.
Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

BUILDERS and Contractors.

Barstow & Co., W. S., Reading, Pa.
Cowper Co., Inc., The John W., Richmond, Va.
Moyer Co., Tilghman, Allentown, Pa.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
White Engineering Corp., J. G., New York.

BUILDINGS (Industrial.)

Belmont Iron Works, Philadelphia, Pa.
Blaw-Knox Co., Pittsburgh, Pa.
Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.
McClintic-Marshall Co., Pittsburgh, Pa.
Nashville Bridge Co., Nashville, Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Portable Sheet Metal.)

Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.

BULKHEADS.

Shore-Line Builders, Inc., Jacksonville, Fla.
Snare Corp., Frederick, New York, N. Y.

BULLDOZERS.

Trackson Co., Milwaukee, Wis.

BUSHINGS (Brass and Bronze.)

Moccasin Bushing Co., Chattanooga, Tenn.

BUSINESS METHODS.

Ernst & Ernst, New York, N. Y.

CABINETS (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

CABLES (Stud Link.)

Woodhouse Chain Works, Trenton, N. J.

—and Wire (Electric.)

American Steel & Wire Co., Balt., Md.
Otonile Co., New York, N. Y.
Roebbing's Sons Co., John A., Trenton, N. J.
Western Electric Co., New York City.

CABLEWAYS (Overhead Suspension.)

Broderick & Bascom Rope Co., St. Louis
Lidgerwood Mfg. Co., Elizabeth, N. J.
Sauerman Bros., Chicago, Ill.

CALCIUM CHLORIDE.

Grasselli Chemical Co., Inc., Birmingham, Ala.

CAN and Box-Making Machinery (Tin.)

Bliss Co., E. W., Brooklyn, N. Y.

CAR Loaders and Unloaders.

Barter-Greene Co., Aurora, Ill.

—Pullers.

Weister & Weller Mfg. Companies, Chicago, Ill.

CARS (Dump, Industrial, Logging and Mine.)

Atlas Car & Mfg. Co., The, Cleveland, O.
Easton Car & Construction Co., Easton, Pa.
Keppel Ind. Car & Equip. Co., Keppel, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.

—Steps (Safety.)

Irving Iron Works Co., Long Island City, N. Y.

CASTINGS (Brass, Bronze and Aluminum.)

Moccasin Bushing Co., Chattanooga, Tenn.
Mountain States Steel Foundries, Parkersburg, W. Va.

—(Chilled Iron.)

Fuller Lehigh Co., Fullerton, Penna.

—(Gray Iron.)

Fuller Lehigh Co., Fullerton, Penna.
Giamerzan Pipe & Fdry. Co., Lynchburg, Va.

National Cast Iron Pipe Co., Birmingham, Ala.

Roanoke Iron & Bridge Works, Inc., Roanoke, Va.

Salem Fdry. & Mach. Wks., Salem, Va.

U. S. Pipe & Foundry Co., Burlington, N. J.

—(Malleable Iron and Steel.)

Timken Roller Bearing Co., Canton, O.

—(Semi-Steel.)

Salem Fdry. & Machine Works, Salem, Va.

—(Steel.)

Bethlehem Steel Co., Bethlehem, Pa.
Crucible Steel Casting Co., Lansdowne, Delaware Co., Pa.
Deemer Steel Casting Co., New Castle, Del.
Lunkenheimer Co., Cincinnati, Ohio.

CEILING (Metal.)

Milcor Steel Co., Milwaukee, Wis.

CEMENT (High Temperature.)

Harbison Walker Refractories Co., Pittsburg, North American Refractories Co., Cleveland, Ohio.

—(Portland.)

Alpha Portland Cement Corp., Birmingham, Ala.
Lehigh Portland Cement Co., New York.
Louisville Cement Co., Louisville, Ky.
Portland Cement Assn., Chicago, Ill.

—Guns.

Cement-Gun Co., Inc., Allentown, Pa.

—Machinery.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

CHAIN BLOCKS (See Blocks, Chain.)**CHAINS (Dredge, Quarry, Steam Shovel.)**

Knoxville Iron Co., Knoxville, Tenn.
Woodhouse Chain Works, Trenton, N. J.

—(High Speed Roller.)

Diamond Chain & Mfg. Co., Indianapolis.

—(Silent Drive.)

Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

—(Sprocket.)

Chain Belt Co., Milwaukee, Wis.
Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

—(Welded.)

Woodhouse Chain Works, Trenton, N. J.

CHAIRS (Opera and Theatre.)

Andrews Co., A. H., Chicago, Ill.

—and Stools (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

CHEMICALS.

Davison Chemical Co., Baltimore, Md.
Grasselli Chemical Co., Inc., Birmingham, Ala.

CHEMISTS, CHEMICAL ENGINEERS (Analytical.)

Barrow-Agee Laboratories, Memphis, Tenn.
Flood & Co., Walter H., Chicago, Ill.
Froehling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
Meigs, Bassett & Slaughter, Phila., Pa.
Picard Laboratories, The, Birmingham, Ala.

Pittsburgh Testing Laboratories, Pittsburgh, Pa.

Southwestern Laboratories, Fort Worth, Texas.

Stillman & Van Stelen, New York.

Wiley & Co., Inc., Baltimore, Md.

—(Consulting, Paper Industry.)

Froehling & Robertson, Inc., Richmond, Va.

CHIMNEYS (Concrete.)

Rust Engineering Co., Birmingham, Ala.

—(Radial Brick.)

Rust Engineering Co., Birmingham, Ala.

CHLORIDE ACCUMULATOR.

Electric Storage Battery Co., Phila., Pa.

CHLORINATORS.

Rees, S. P., Atlanta.

CIRCUIT BREAKERS.

I. T. E. Circuit Breaker Co., Phila., Pa.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CITY AND TOWN PLANNING.

Draper, E. S., Charlotte, N. C.
Ludlow Engineers, Winston-Salem, N. C.

CLOCKS (For all purposes.)

Kaiser Klock Co., L. E., Baltimore, Md.

—(Watchman's Portable.)

Davis-Paradis Watchman's Clock Corp., New York, N. Y.

Kaiser Klock Co., L. E., Baltimore, Md.

CLUTCHES (Friction.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Schultz & Son, A., Chicago, Ill.
Wood's Sons Co., T. B., Chambersburg, Pa.

COAL (Bituminous.)

Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—and Ash-Handling Mch.

Allen-Sherman-Hoff Co., Phila., Pa.
Chain Belt Co., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago.
Webster & Weller Mfg. Companies, Chicago, Ill.

—Bunkers (Cast Iron.)

Allen-Sherman-Hoff Co., Phila., Pa.

—Tipples.

American Bridge Co., New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.

COCKS (Service.)

Merco Nordstrom Valve Co., San Francisco, Calif.

COKE.

Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

COLUMNS (Cast Iron.)

U. S. Pipe & Foundry Co., Burlington, N. J.

COMPRESSORS.

Union Steam Pump Co., Battle Creek, Mich.

—(Gasoline Extraction.)

Sullivan Machinery Co., Chicago, Ill.

CONCRETE (Block Machinery.)

Blystone Mfg. Co., Cambridge Springs, Pa.

—Construction (Reinforced.)

Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
Rust Engineering Co., Birmingham, Ala.

—Floor Slabs.

American Cement Tile Mfg. Co., Pittsburgh, Pa.

—Information Only.

Portland Cement Assn., Chicago, Ill.

—Mixers.

Blystone Mfg. Co., Cambridge Springs, Pa.
Chain Belt Co., Milwaukee, Wis.
Dunning & Boschert Press Co., Inc., Syracuse, N. Y.
Jaeger Machine Co., Columbus, Ohio.
Lansing Co., Lansing, Mich.

—Pipe Machinery (See Pipe Machinery, Concrete.)**—Placing Equipment.**

National Equipment Corp. (Insley Division), Milwaukee, Wis.

—Road Curing.

McEverlast, Inc., Los Angeles, Cal.

—Roofing Tile.

American Cement Tile Mfg. Co., Pittsburgh, Pa.

CONDENSERS.

Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.
Manitowoc Iron Works Co., Manitowish, Mich.
Union Steam Pump Co., Battle Creek, Mich.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CONDUITS (Electric, Interior, Steel.)

Western Electric Co., New York City.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

CONTRACTORS (Bridge.)

Hanover City Bridge Co., Hanover City, Mo.
Snare Corp., Frederick, New York.

—(Drainage and Dredging.)

Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.

—(Electrical.)

Walker Electrical Co., Atlanta, Ga.
Warner Service Co., Knoxville, Tenn.
Webb Electric Co., Anderson, S. C.

—(Foundations and Dams.)

Calligan & Co., A. H., Richmond, Va.
Snare Corp., Frederick, New York, N. Y.

—(General.)

Angle-Blackford Co., Greensboro, N. C.
Blair, Algernon, Montgomery, Ala.
Charleston Constructors, Inc., Charleston, S. C.
Cornell-Young Co., Inc., Mason, Ga.

Cowper Co., Inc., The John W., Richmond, Va.
Flske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Saville, Inc., Allen J., Richmond, Va.
Snare Corp., Frederick, New York, N. Y.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.

—(Industrial Buildings.)

Angle-Blackford Co., Greensboro, N. C.
Barstow & Co., W. S., Reading, Pa.
Blair, Algernon, Montgomery, Ala.
Cowper Co., Inc., The John W., Richmond, Va.
Flske-Carter Constr. Co., Greenville, S. C.
Snare Corp., Frederick, New York, N. Y.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.

—Mill Village.

Hornbuckle Contracting Co., Atlanta, Ga.

—(Plastering.)

Gomez & Co., P. L., Atlanta, Ga.
Jennings & Co., Floyd, Atlanta, Ga.

—(Power Piping.)

Poe Piping & Heating Co., Greenville, S. C.

—(Power Plants.)

Snare Corp., Frederick, New York, N. Y.

—(Railroad.)

Calligan & Co., A. H., Richmond, Va.
Cornell-Young Co., Inc., Mason, Ga.

—(Reinforced Concrete.)

Blair, Algernon, Montgomery, Ala.
Cement Gun Construction Co., Chicago.
Quinte Conc. & Constr. Co., Kansas City.
Tucker & Laxton, Charlotte, N. C.

—(Road and Street Paving.)

Flske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrory Co., The J. B., Atlanta, Ga.

—(Rust Proofing.)

Dixie Electro Plating Co., Houston, Tex.

—(Sewerage and Waterworks.)

Gridley Constr. Co., Lee A., Knoxville, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrory Co., The J. B., Atlanta, Ga.
Snare Corp., Frederick, New York, N. Y.
Tucker & Laxton, Charlotte, N. C.

—(Sprinkler System.)

Poe Piping & Heating Co., Greenville, S. C.

—(Swimming Pool.)

Rees, S. P., Atlanta, Ga.

—(Water-Works.)

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

—Machinery and Supplies.**(New.)**

Bay City Shovels, Inc., Bay City, Mich.
Weller & Co., Birmingham, Ala.
W-K-M Co., Inc., Houston, Texas.

—Machinery and Supplies.**(Used.)**

Christman & Co., J. R., Houston, Tex.
Cohen, Chas. F., Lima, O.
Equip. Sales & Rentals Co., Pittsburgh.
Gulon, Harry P., New York, N. Y.
Johnson & Hoehler, Fernwood, Pa.
Marine Metal & Supply Co., New York.

CONTRACT WORK WANTED.

(See following classifications.)

Boiler and Tank Works.**Castings.****Forgings.****Foundry and Machine Shops.****Machinery (Special.)****Ornamental Iron Work.****Patterns.****Sheet Metal Work.****Structural Steel and Iron.****Welding Plants.****CONVEYING AND ELEVATING****MACHINERY.**

Barber-Greene Co., Aurora, Ill.
Chain Belt Co., Milwaukee, Wis.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Universal Crusher Co., Cedar Rapids, Iowa.
Webster & Weller Mfg. Companies, Chicago, Ill.

CONVEYORS (Portable, Power-Driven.)

Clark Tractor Co., Battle Creek, Mich.

CORRESPONDENCE SCHOOLS.

International Correspondence Schools, Scranton, Pa.

The Davison Chemical Company

Manufacturers and Distributors of

All Grades of

**SULPHURIC ACID
SUPERPHOSPHATE
DOUBLE SUPERPHOSPHATE**

Main Plant, Baltimore: Pyrites Deposits Cienfuegos District, Cuba; Phosphate Rock Plant, Southern Phosphate Corporation, Bartow, Florida.

Fertilizer Plants: Maryland 11; Virginia 9; Pennsylvania 10; Georgia 2; Ohio 2; North Carolina 11; South Carolina, Mississippi, Louisiana, Texas, Indiana, West Virginia, Tennessee, Connecticut and New Jersey 1 each.

Main Office: Baltimore Trust Building, Baltimore

COMPLETE FOUNDRY SERVICE

The MOCCASIN BUSHING COMPANY, manufacturers of MOCCASIN OIL DISTRIBUTING BUSHINGS, is prepared to supply engine brasses, brass or bronze castings of all descriptions and MOCCASIN solid or cored bronze bars at reasonable prices.

Send your specifications to the MOCCASIN BUSHING COMPANY, 2000 Chestnut Street, Chattanooga, Tennessee. Your order will receive our prompt attention.

DEEMER STEEL CASTING CO.
DEPENDABLE CASTINGS
Shipped PROMPTLY
PATTERN and MACHINE WORK
CARBON MANGANESE ALLOY
NEW CASTLE, DELAWARE

ELECTRIC STEEL CASTINGS

Weighing from 1 lb. to 500 lbs. each

Quantity Production A Specialty

Nickel, Chrome and Other Alloy

Quick Delivery

Inquiries Solicited

CRUCIBLE STEEL CASTING COMPANY

LANSDOWNE, DELAWARE COUNTY, PA.

WE MAKE A SPECIALTY OF HIGH GRADE GREY IRON AND SEMI-STEEL CASTINGS

All Kinds of Machine Work. Special Machines Made to Order.
Prices Will Suit You. Prompt Service.

Salem Foundry & Machine Works

Salem, Va.

QUALITY PIG IRON PLUS

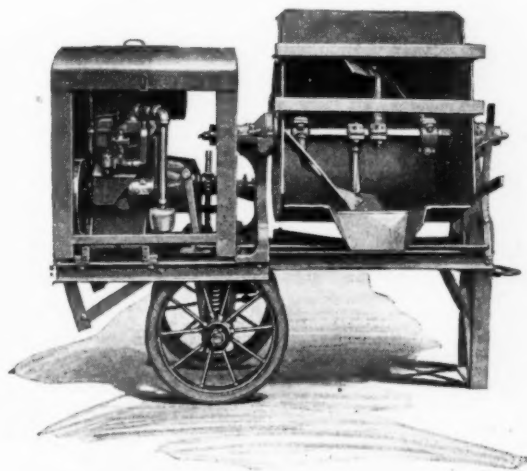
Intelligent Cupola Service

SLOSS-SHEFFIELD STEEL & IRON CO.
BIRMINGHAM, ALA.

USE A BLYSTONE THRU-A-DOOR

AT OUR RISK

Before buying you may prove to your own satisfaction that the Blystone Thru-A-Door Mixer will do all we claim. Because of past performance we are so completely sold on it that we don't hesitate to let you use one at OUR RISK. Write for prices and circular.



USE THE BLYSTONE THRU-A-DOOR

for mixing

PLASTER—MORTAR—CONCRETE

The Blystone Thru-A-Door is a compact unit that can be used any place on the job INSIDE or OUTSIDE. It can be taken from floor to floor—will pass through a 30" door or an opening 6 ft. square.

Many contractors have paid for this wonderful Mixer with the savings made on ONE job and have continued to save money on MATERIAL and LABOR every time they use it. The Blystone Patented Reverse Spiral Shovel System assures a thorough mix and does the work so thoroughly that you can add from 30 to 40% more material to a bag of lime or cement and obtain as strong a mix.

Write for Circular and Prices

BLYSTONE MANUFACTURING CO.

830 Record Street, Cambridge Springs, Pa.

STEEL PLATEWORK

Every description of fabricated steel

TANKS—RECEIVERS—CHUTES—TRAYS—ORE BINS
DREDGE PIPE—SMOKE STACKS—BREECHINGS

Electric and acetylene welding and cutting.

COST SERVICE.

Le Baron, E. T., Jacksonville, Fla.

COTTON GIN MACHINERY.

Continental Gin Co., Birmingham, Ala.

—Mill Machinery.

Southern Spindle & Flyer Co., Inc., Charlotte, N. C.

COUNTING APPARATUS.

Veeber-Root, Inc., Hartford, Conn.

COUPLINGS.

Golden's Fdy. & Mach. Co., Columbus, Ga.

—(Shaft.)

Wood's Sons Co., T. B., Chambersburg, Pa.

CRANES.

Austin Machinery Corp., Muskegon, Mich.

National Equipment Co. (Incl. Keckring, Parsons), Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The Lorain, Ohio.

Whiting Corp., Harvey, Ill.

—(Cantilever.)

Whiting Corp., Harvey, Ill.

—(Crawler.)

Harnischfeger Corp., Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The Lorain, Ohio.

—(Crawling Tractor.)

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The Lorain, Ohio.

—(Electric Traveling.)

Harnischfeger Corp., Milwaukee, Wis.

Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.

Whiting Corp., Harvey, Ill.

—(Full Circle Steam and Electric.)

Austin Machinery Corp., Muskegon, Mich.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The Lorain, Ohio.

—(Gasoline.)

Harnischfeger Corp., Milwaukee, Wis.

Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The Lorain, Ohio.

—(Jib.)

Whiting Corp., Harvey, Ill.

—(Locomotive.)

Bucyrus-Erie Co., Erie, Penna.

Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The Lorain, Ohio.

—(Material Handling.)

Bay City Shovels, Inc., Bay City, Mich.

Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The Lorain, Ohio.

Universal Crane Co., Lorain, Ohio.

—(Traveling, Hand Power.)

Harrington Co., The Philadelphia, Pa.

Whiting Corp., Harvey, Ill.

CRAWLERS (Tractor.)

Middell Co., W. A., Bucyrus, Ohio.

Trackson Co., Milwaukee, Wis.

CRESOTED MATERIALS.

Amer. Cresote Wks., Inc., New Orleans.

Delaware Wood Preserving Co., Phila.

Savannah Cresoating Co., Savannah, Ga.

CRESOTED TIMBER.

Ayer & Lord Tie Co., Chicago, Ill.

Brown Wood Preserving Co., Louisville, Ky.

CRESOTE OIL.

Amer. Cresote Wks., Inc., New Orleans.

Ayer & Lord Tie Co., Inc., Chicago.

CRESOTING (Wood Materials.)

Amer. Cresote Wks., Inc., New Orleans.

Amer. Cresote Wks., Inc., Louisville, Ky.

Brown Wood Preserving Co., Louisville, Ky.

Carolina Wood Preserving Co., Charleston, S. C.

Delaware Wood Preserving Co., Phila.

Eppinger & Russell Co., New York, N. Y.

Gulf States Cress Co., Hattiesburg, Miss.

Savannah Cresoating Co., Savannah, Ga.

Taylor-Colquhoun Co., Spartanburg, S. C.

Wales Wood-Preserving Co., Norfolk, Va.

CROSS-ARMS (Cresoted.)

Amer. Cresote Wks., Inc., New Orleans.

Amer. Cresote Wks., Inc., Louisville, Ky.

Savannah Cresoating Co., Savannah, Ga.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York, N. Y.

CROSS-TIES (Cresoted.)

Amer. Cresote Wks., Inc., New Orleans.

Amer. Cresote Wks., Inc., Louisville, Ky.

Ayer & Lord Tie Co., Inc., Chicago.

Carolina Wood Preserving Co., Charleston, S. C.

Eppinger & Russell Co., New York, N. Y.

Savannah Cresoating Co., Inc., Savannah, Ga.

Taylor-Colquhoun Co., Spartanburg, S. C.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York, N. Y.

CRUSHED STONE (Road Concrete and Ballast.)

American Limestone Co., Knoxville, Tenn.

Boxley & Co., W. W., Roanoke, Va.

CRUSHERS (Coal and Coke.)

Fuller Lehigh Co., Fullerton, Pa.

—Rock.

Universal Crusher Co., Cedar Rapids, Iowa.

CRUSHING and Pulverizing Machinery.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Day Pulverizer Co., Knoxville, Tenn.

Fuller Lehigh Co., Fullerton, Pa.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Raymond Bros. Impact Pulverizer Co., Chicago, Ill.

Universal Crusher Co., Cedar Rapids, Iowa.

W-K-M Co., Inc., Houston, Texas.

CULVERT PIPE (Cast Iron.)

Amer. Cast Iron Pipe Co., Birmingham.

Cast Iron Pipe Research Assn., Chicago.

U. S. Pipe & Foundry Co., Burlington, N. J.

—(Corrugated Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.

Armco Culvert Mfrs. Assn., Middletown, O.

Dixie Culvert & Metal Co., Atlanta, Ga.

Dixie Culvert Mfg. Co., Little Rock, Ark.

Louisiana Corr. Culvert Co., Baton Rouge, La.

Tenn. Metal Culvert Co., Nashville, Tenn.

Western Metal Mfg. Co., Houston, Texas.

CUTTERS (Wire Rope.)

Leschen & Sons Rope Co., A., St. Louis.

CYLINDERS (Compressed Air, Gas.)

Janney, Jr., Joa. A., Phila., Pa.

National Tube Co., Pittsburgh, Pa.

DERRICKS and Derrick Fittings.

Lidgerwood Mfg. Co., Elizabeth, N. J.

Sageen Derrick Co., Chicago, Ill.

—(Used.)

Galer Equipment Corp., New York, N. Y.

DESKS (School.)

Andrews Co., A. H., Chicago, Ill.

—(Steel Factory.)

Anglo Steel Steel Co., Plainwell, Mich.

DITCHING MACHINERY.

Barber-Greene Co., Aurora, Ill.

Bay City Shovels, Inc., Bay City, Mich.

Harnischfeger Corp., Milwaukee, Wis.

Hayward Co., The, New York, N. Y.

Industrial Brownhoist Corp., Cleveland.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Owen Bucket Co., The, Cleveland, O.

DOORS (Bronze.)

Michaeli Art Bronze Co., Covington, Ky.

—(Fire.)

Merchant & Evans Co., Philadelphia, Pa.

Richards-Wilcox Mfg. Co., Aurora, Ill.

—(Fireproof, Air Chamber.)

Wilson Corp., The J. G., New York.

—(Kalamazin.)

Moeschi-Edwards Corr. Co., Cincinnati.

—(Rolling, Steel and Wood.)

Kinnear Mfg. Co., The, Columbus, Ohio.

Mahon Co., R. C., Detroit, Mich.

Moeschi-Edwards Corr. Co., Cincinnati.

Wilson Corp., The J. G., New York.

—(Steel.)

Detroit Steel Products Co., Detroit, Mich.

—(Tubular Steel.)

Bayley Co., Wm., Springfield, O.

DRAFTSMEN'S SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

DRAGLINE EXCAVATORS.

Austin Machinery Corp., Muskegon, Mich.

Bucyrus-Erie Co., Erie, Penna.

Harnischfeger Corp., Milwaukee, Wis.

Monaghan Mfg. Corp., Chicago, Ill.

National Equipment Corp. (Keckring, Inc.), Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Sauterman Bros., Chicago, Ill.

Thew Shovel Co., The, Lorain, Ohio.

Universal Power Shovel Co., Milwaukee, Wis.

DREDGES (Dipper, Elevator, Hydraulic.)

Bay City Shovels, Inc., Bay City, Mich.

Bucyrus-Erie Co., Erie, Pa.

Ellis Machine Corp., Baltimore, Md.

Morris Machine Wks., Baldwinville, N. Y.

DREDGING (River and Harbor Improvement.)

Arundel Corp., The, Baltimore, Md.

Atlantic Gulf and Pacific Co., New York.

—Machinery.

American Steel Dredge Co., Fort Wayne, Ind.

Ellis Machine Corp., Baltimore, Md.

Hayward Co., The, New York.

DRILLING CONTRACTORS.

Mott Core Drilling Co., Huntington, W. Va.

Pennsylvania Drilling Co., Pittsburgh, Pa.

Southern Drilling Co., Saltville, Va.

Sprague & Henwood, Inc., Scranton, Pa.

DRILLS (Artesian Well.)

Virginia Machinery & Well Co., Inc., Richmond, Va.

—(Electric.)

Chicago Pneumatic Tool Co., New York.

Sullivan Mch. Co., Chicago.

—(Pneumatic.)

Chicago Pneumatic Tool Co., New York.

Ingersoll-Rand Co., New York, N. Y.

Sullivan Machinery Co., Chicago, Ill.

DRINKING FOUNTAINS.

Randle-Spence Mfg. Co., Milwaukee, Wis.

DROP-FORGING MACHINERY.

Bliss Co., E. W., Brooklyn, N. Y.

DRYERS (Gravel and Sand.)

Ripley Fdy. & Mch. Co., Ripley, Ohio.

DRY KILNS and Equipment.

Moore Dry Kiln Co., Jacksonville, Fla.

DRYING MACHINERY.

American Process Co., New York, N. Y.

DUMP TRUCK BODIES and HOISTS.

Easton Car & Construction Co., Easton, Pa.

Lee Trailer & Body Co., Inc., Plymouth, Ind.

DUSTPROOFING (Concrete.)

Sonnenborn Sons, Inc., L., New York.

DYESTUFFS.

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

DYNAMITE (Industrial and Agricultural.)

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

Hercules Powder Co., Inc., Wilmington, Del.

ECONOMIZERS (Fuel.)

Babcock & Wilcox Co., New York.

ELECTRICAL Instruments and Supplies.

Adams Electric Co., Frank, St. Louis.

General Electric Co., Schenectady, N. Y.

Western Electric Co., New York City.

—Machinery (Generators, Motors, etc., New.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Ellis Machine Corp., Miami, Fla.

Fairbanks, Morse & Co., Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Howell Electric Motors Co., Howell, Mich.

Rockford Power Machy. Co., Rockford, Ill.

Washington Electric & Mfg. Co., E. Pittsburgh, Pa.

—Machinery (Generators, Motors, etc., Used.)

Delta Equipment Co., Philadelphia, Pa.

Electric Service Co., Cincinnati, Ohio.

Electrical Equip. Co., Raleigh, N. C.

General Electric Co., Schenectady, N. Y.

Gregory Electric Co., Chicago.

Nashville Industrial Corp., Old Hickory, Tenn.

Nussbaum & Co., V. M., Ft. Wayne, Ind.

O'Brien Machinery Co., The, Phila., Pa.

Randle Machinery Co., The, Cincinnati, O.

Rockford Power Machy. Co., Rockford, Ill.

Stewart Elec. Co., John A., Cincinnati.

—Machinery Repairing (Motors, Generators, etc.)

Electric Service Co., Cincinnati, Ohio.

Gregory Electric Co., Chicago.

ELECTRIC LIGHTING.

General Electric Vapor Lamp Co., Hoboken, N. J.

ELECTRIC SHOVELS (See Shovels.)**ELEVATOR Cables.**

Leschen & Sons Rope Co., A., St. Louis.

—(Equalizers.)

Evans Elevator Equalizer Co., Bedford, Ind.

ELEVATORS (Electric.)

American Elevator & Machine Co., Inc., Louisville, Ky.

Miller Co., St. Louis, Mo.

—(Hand and Belt Power.)

American Elevator & Machine Co., Inc., Louisville, Ky.

Miller Co., St. Louis, Mo.

—(Hydraulic.)

American Elevator & Machine Co., Inc., Louisville, Ky.

—(Portable.)

O. K. Clutch & Machy. Co., Columbia, Pa.

ENGINEERS (Airports.)

MacElwaine & Crandall, Inc., Cambridge, Mass.

Shaw Co., Russell B., St. Louis, Mo.

—(Appraisal.)

Ballinger Co., Philadelphia, Pa.

Batter & Kipp, Inc., Chicago, Ill.

Fay, Spofford & Thorndike, Boston, Mass.

Freeland, Roberts & Co., Nashville, Tenn.

Gardner & Howe, Memphis, Tenn.

Greiner & Co., J. E., Baltimore, Md.

Hardaway Contracting Co., Columbus, Ga.

Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.

Howerton Engineering Co., Asheville, N. C.

Steel & Leiby, Knoxville, Tenn.

Turner, C. A. P., Minneapolis, Minn.

Virginia Bridge & Iron Co., Roanoke, Va.

Wheeler, Walter H., Minneapolis, Minn.

—(Aviation.)

Shaw Co., Russell B., St. Louis, Mo.

—(Bridge.)

Atlantic Bridge Co., Greensboro, N. C.

(Dams.)

Alpaugh & Sons, Chas. W., Manassas, Va.
Battay & Kipp, Inc., Chicago, Ill.
Bylesby Engineering and Management Corp., Chicago, Ill.
Floyd & Lechridge, Dallas, Texas.
Gardner & Howe, Memphis, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Harza Engineering Co., Chicago.
Hedrick Inc., Ira G., Hot Springs Nat'l Park, Ark.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sirrline & Co., J. E., Greenville, S. C.
Tucker & Laxton, Charlotte, N. C.
Wheeler, Walter H., Minneapolis, Minn.
White Engr. Corp., J. G., New York.

(Drainage and Irrigation.)

Floyd & Lechridge, Dallas, Texas.
Ford, Bacon & Davis, Inc., New York.
Fuller & McClintock, New York, N. Y.
Hills Co., George B., Jacksonville, Fla.
Ludlow Engineers, Winston-Salem, N. C.

(Efficiency.)

Barstow & Co., W. S., Reading, Pa.
Ernst & Ernst, New York, N. Y.

(Electrical.)

Battay & Kipp, Inc., Chicago, Ill.
Engineering Service Corp., Houston, Texas.
Hoosier Engineering Co., Chicago, Ill.
Lee, William S., Charlotte, N. C.
Lockwood Greene Engrs., Inc., New York City.
Main, Inc., Chas. T., Boston, Mass.
Mullerengren, Arthur L., Kansas City, Mo.
Sanderson & Porter, New York, N. Y.
Stone & Webster, Inc., Boston, Mass.
Tucker & Laxton, Charlotte, N. C.
Webb Electric Co., Anderson, S. C.
White Co., Gilbert C., Durham, N. C.
Wiley & Wilson, Lynchburg, Va.

(Electric-Light and Power Plants.)

Battay & Kipp, Inc., Chicago, Ill.
Biggs Eng. Co., W. E., Knoxville, Tenn.
Bylesby Engineering and Management Corp., Chicago, Ill.
Ford, Bacon & Davis, Inc., New York.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Mullerengren, Arthur L., Kansas City, Mo.
Sanderson & Porter, New York, N. Y.
Scofield Engineering Co., Phila., Pa.
Stone & Webster, Inc., Boston, Mass.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.
White Co., Gilbert C., Durham, N. C.

(Flood Control.)

Floyd & Lechridge, Dallas, Texas.
Harza Engineering Co., Chicago.

(Forest.)

Lacey & Co., Jas. D., New York, N. Y.

(Gas.)

Bylesby Engineering and Management Corp., Chicago, Ill.
Ford, Bacon & Davis, Inc., New York.
Harrison, William Henry, Washington, D. C.

(Geological.)

De Kalb, Courtenay, New York City.
Froehling & Robertson, Richmond, Va.
Harrison, William Henry, Washington, D. C.
Wadleigh & Bailey, Washington, D. C.

(Harbor Improvements.)

Billingsley, James W., New Orleans, La.
Engineering Service Corp., Houston, Texas.
Fay, Spofford & Thorndike, Boston, Mass.

(Heating.)

Battay & Kipp, Inc., Chicago, Ill.
Biggs Eng. Co., W. E., Knoxville, Tenn.
Wiley & Wilson, Lynchburg, Va.

(Hydraulic.)

Alpaugh & Sons, Chas. W., Manassas, Va.
Floyd & Lechridge, Dallas, Texas.
Fuller & McClintock, New York, N. Y.
Harza Engineering Co., Chicago.
Main, Inc., Chas. T., Boston, Mass.

(Hydro-electric.)

Alpaugh & Sons, Chas. W., Manassas, Va.
Battay & Kipp, Inc., Chicago, Ill.
Bylesby Engineering and Management Corp., Chicago, Ill.
Harza Engineering Co., Chicago.
Lee, William S., Charlotte, N. C.
Ludlow Engineers, Winston-Salem, N. C.
Main, Inc., Chas. T., Boston, Mass.
Mees & Mees, Charlotte, N. C.
Platt, William M., Durham, N. C.
Sanderson & Porter, New York, N. Y.
Scofield Engineering Co., Phila., Pa.
Sirrline & Co., J. E., Greenville, S. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.

(Ice and Refrigerating.)

Engineering Service Corp., Houston, Texas.

(Industrial Plants.)

Ballingier Co., Philadelphia, Pa.
Barstow & Co., W. S., Reading, Pa.
Battay & Kipp, Inc., Chicago, Ill.
Biggs Eng. Co., W. E., Knoxville, Tenn.
Billingsley, James W., New Orleans, La.
Charleston Constructors, Inc., Charleston, S. C.
Consoer, Older & Quinlan, Inc., Chicago.
Converse & Co., J. B., Mobile, Ala.
Fay, Spofford & Thorndike, Boston, Mass.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Harty, Charles H., New York City.

(Lockwood Greene Engrs., Inc., New York City.)

MacElwae & Crandall, Inc., Cambridge, Mass.
Main, Inc., Chas. T., Boston, Mass.
Mees & Mees, Charlotte, N. C.
Morgan Constr. Co., Worcester, Mass.
Mullerengren, Arthur L., Kansas City, Mo.
Preacher & Co., Inc., G. Lloyd, Atlanta.
Sanderson & Porter, New York, N. Y.
Scofield Engineering Co., Phila., Pa.
Simmons, Inc. & Associates, B. Stanley, Washington, D. C.
Sirrline & Co., J. E., Greenville, S. C.
Smith, Elroy G., Augusta, Ga.
Stone & Webster, Inc., Boston, Mass.
Turner, C. A. P., Minneapolis, Minn.
Widmer Engineering Co., St. Louis, Mo.
Williamson, Lee H., Charlottesville, Va.

(Industrial Survey.)

Converse & Co., J. B., Mobile, Ala.
Harty, Charles H., New York City.
Lockwood Greene Engrs., Inc., New York City.
Wadleigh & Bailey, Washington, D. C.

(Inspection and Tests.)

Barrow-Agee Laboratories, Memphis, Tenn.
Conard & Busby, Burlington, N. J.
Dow & Smith, New York, N. Y.
Flood & Co., Walter H., Chicago, Ill.
Froehling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
Pitard Laboratories, Birmingham, Ala.
Pittsburgh Testing Laboratories, Pittsburgh, Pa.
Southwestern Laboratories, Ft. Worth, Texas.

(Landscapes.)

Draper, E. S., Charlotte, N. C.

(Lighting.)

Battay & Kipp, Inc., Chicago, Ill.
Bylesby Engineering and Management Corp., Chicago, Ill.
Ford, Bacon & Davis, Inc., New York.
General Electric Vapor Lamp Co., Hoboken, N. J.
Wiley & Wilson, Lynchburg, Va.

(Mechanical.)

Battay & Kipp, Inc., Chicago, Ill.
Charlton & Davis, Ft. Lauderdale, Fla.
Engineering Service Corp., Houston, Texas.
Invicta Engineering Co., Birmingham, Ala.
Lee, William S., Charlotte, N. C.
Lockwood Greene Engrs., Inc., New York City.
Main, Inc., Chas. T., Boston, Mass.
Mees & Mees, Charlotte, N. C.
Meigs, Bassett & Slaughter, Phila., Pa.
Sanderson & Porter, New York, N. Y.
Wiley & Wilson, Lynchburg, Va.

(Metal Protection.)

Dixie Electro Plating Co., Houston, Tex.

(Mining. See Engineers, Geological.)**(Municipal.)**

Billingsley, James W., New Orleans, La.
Consoer, Older & Quinlan, Inc., Chicago.
Dow & Smith, New York, N. Y.
Harzab Engr. Co., C. N., Nashville, Tenn.
Hills Co., George B., Jacksonville, Fla.
Howerton Engineering Co., Asheville, N. C.
Knowles, Inc., Morris, Pittsburgh, Pa.
Ludlow Engineers, Winston-Salem, N. C.
McCrary Co., The J. B., Atlanta, Ga.
Spoon & Lewis, Greensboro, N. C.
White Co., Gilbert C., Durham, N. C.

(Paving and Roads.)

Billingsley, James W., New Orleans, La.
Dow & Smith, New York, N. Y.
Freeland, Roberts & Co., Nashville, Tenn.
Harzab Engr. Co., C. N., Nashville, Tenn.
Howerton Engineering Co., Asheville, N. C.
Ludlow Engineers, Winston-Salem, N. C.
Platt, William M., Durham, N. C.
Spoon & Lewis, Greensboro, N. C.
White Co., Gilbert C., Durham, N. C.

(Production.)

Scofield Engr. Co., Phila., Pa.

(Public Service Properties.)

Bylesby Engineering and Management Corp., Chicago, Ill.
Ford, Bacon & Davis, Inc., New York.
Fuller & McClintock, New York, N. Y.
Knowles, Inc., Morris, Pittsburgh, Pa.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Scofield Engineering Co., Phila., Pa.
Stone & Webster, Inc., Boston, Mass.
White Engineering Corp., J. G., New York.

(Railroad.)

Mees & Mees, Charlotte, N. C.

(Reinforced Concrete Bridges, Buildings, etc.)

Atlantic Bridge Co., Greensboro, N. C.
Ballingier Co., Philadelphia, Pa.
Battay & Kipp, Inc., Chicago, Ill.
Fay, Spofford & Thorndike, Boston, Mass.
Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Lockwood Greene Engrs., Inc., New York City.
Main, Inc., Chas. T., Boston, Mass.
Steel & Leiby, Knoxville, Tenn.
Tucker & Laxton, Charlotte, N. C.

(Turner, C. A. P., Minneapolis, Minn.)

Wheeler, Walter H., Minneapolis, Minn.

(Research and Development.)

Invicta Engineering Co., Birmingham, Ala.

(Sanitary.)

Harza Engineering Co., Chicago.

(Sewage Disposal Plants.)

Fuller & McClintock, New York, N. Y.
Ludlow Engineers, Winston-Salem, N. C.
McCrary Co., The J. B., Atlanta, Ga.
Platt, William M., Durham, N. C.
Wiedeman & Singleton, Inc., Atlanta.

(Sewerage and Waterworks.)

Conard & Busby, Burlington, N. J.
Consoer, Older & Quinlan, Inc., Chicago.
Ford, Bacon & Davis, Inc., New York.
Fuller & McClintock, New York, N. Y.
Harzab Engr. Co., C. N., Nashville, Tenn.
Hills Co., George B., Jacksonville, Fla.
Howerton Engineering Co., Asheville, N. C.
Knowles, Inc., Morris, Pittsburgh, Pa.
Ludlow Engineers, Winston-Salem, N. C.
Mees & Mees, Charlotte, N. C.
Platt, William M., Durham, N. C.
Sanderson & Porter, New York, N. Y.
Spoon & Lewis, Greensboro, N. C.
Tucker & Laxton, Charlotte, N. C.
White Co., Gilbert C., Durham, N. C.
White Engineering Corp., J. G., New York.
Wiedeman & Singleton, Inc., Atlanta, Ga.
Williamson, Lee H., Charlottesville, Va.

(Structural.)

Freeland, Roberts & Co., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs Nat'l Park, Ark.
Hills Company, Geo. B., Jacksonville, Fla.
Lockwood Greene Engrs., Inc., New York City.
Simmons, Inc. & Associates, B. Stanley, Washington, D. C.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.

(Textile Mills.)

Ballingier Co., Philadelphia, Pa.
Lockwood Greene Engrs., Inc., New York City.
Main, Inc., Chas. T., Boston, Mass.
Sirrline & Co., J. E., Greenville, S. C.

(Transmission Lines.)

Hoosier Engineering Co., Chicago, Ill.

(Ventilating and Heating.)

Biggs Eng. Co., W. E., Knoxville, Tenn.
Wiley & Wilson, Lynchburg, Va.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.

ENGINES (Compressed Air.)

Dake Engine Co., Grand Haven, Mich.

(Diesel Type.)

Fairbanks, Morse & Co., Chicago, Ill.

(Gas and Gasoline.)

Light Mfg. & Fdry. Co., Pottstown, Pa.
Nove Engine Co., Lansing, Mich.
Sterling Engine Co., Buffalo, N. Y.

(Gas and Oil.)

Chicago Pneumatic Tool Co., New York.

(Hoisting.)

Mundy Hoisting Engine Co., J. S., Newark, N. J.

(Marine.)

Fairbanks, Morse & Co., Chicago, Ill.

(Oil.)

Ingersoll-Rand Co., New York, N. Y.
Continental Gin Co., Birmingham, Ala.

(Steam.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Cole Mfg. Co., R. D., Newnan, Ga.
Lefell & Co., The James, Springfield, O.
Lombard Iron Works & Supply Co., Augusta, Ga.
Morris Machine Works, Baldwinville, N. Y.
Scheldt's Sons Co., J. S., Mason, Ga.

ENVELOPES.

Young & Seldon Co., Baltimore, Md.

ESTIMATORS (Building & Construction.)

Spring, Charles Herbert, Greensboro, N. C.

EXCAVATING MACHINERY.

Bay City Shovels, Inc., Bay City, Mich.
Bucyrus-Erie Co., Erie, Penna.
Harnischfeger Corp., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland.
Monaghan Mfg. Corp., Chicago, Ill.
National Equipment Corp. (Kochring, Insley, Parsons), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
Universal Power Shovel Co., Milwaukee, Wis.

EXCAVATORS (Clamshell and Orange Peel.)

Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., Lorain, Ohio.

(Dragline. See Dragline Excavators.)**(Trench.)**

Barber-Greene Co., Aurora, Ill.
Bay City Shovels, Inc., Bay City, Mich.
Bucyrus-Erie Co., Erie, Penna.
Harnischfeger Corp., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Monaghan Mfg. Corp., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Universal Power Shovel Co., Milwaukee, Wis.

EXHAUST FANS (See Blowers and Exhaust Fans.)**Systems (See Blowers and Exhaust Fans.)****EXPLOSIVES.**

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.

FACTORY Management Systems.

Ernst & Ernst, New York, N. Y.

FANS, Exhaust (See Blowers and Exhaust Fans.)**FEED-WATER HEATERS and Purifiers.**

American Water Softener Co., Phila., Pa.

FENCE POSTS (Crescoted.)

Ayer & Lord Tie Co., Chicago, Ill.

FENCING Entrance Gates (Iron, Steel and Wire.)

American Steel and Wire Co., Balto., Md.
Anchor Post Fence Co., Baltimore, Md.
Cyclone Fence Co., Waukegan, Ill.
Page Fence Association, Chicago, Ill.
Stewart Iron Works Co., Cincinnati, O.

(Field and Industrial, Wire Woven.)

American Steel and Wire Co., Balto., Md.
Anchor Post Fence Co., Baltimore, Md.
Cyclone Fence Co., Waukegan, Ill.
Gulf States Steel Co., Birmingham, Ala.
Page Fence Association, Chicago, Ill.
Stewart Iron Works Co., Cincinnati, O.

FERTILIZER MACHINERY.

Raymond Bros., Impact Pulv. Co., Chicago.

FILTER (For Domestic and Industrial Purposes.)

American Water Softener Co., Phila., Pa.
International Filter Co., Chicago, Ill.
Rees, S. P., Atlanta.
Roberts Filter Mfg. Co., Darby (Phila.), Pa.
Seale & Sons Co., Wm. B., Oakmont, Pa.

FINANCING.

Akers, William, Atlanta, Ga.
Electric Bond & Share Co., New York.
Garraway & Co., S. G., Chicago.
Gay & Co., W. O., New York, N. Y.

FIRE BRICK.

North American Refractories Co., Cleveland, Ohio.

(Clay.)

Alabama Clay Products Co., Birmingham.
Cambria Clay Products Co., Blackfork, O.

FIRE EXTINGUISHERS.

Myers & Bro. Co., The F. E., Ashland, O.

FIREPROOF Building Material.

Bannon Pipe Co., Louisville, Ky.
Robertson Co., H. H., Pittsburgh.

Doors and Shutters.

Kinnear Mfg. Co., The, Columbus, Ohio.
Mahon Co., R. C., Detroit, Mich.
Moeschl-Edwards Corr. Co., Cincinnati, O.
Richards-Wilcox Mfg. Co., Aurora, Ill.
Wilson Corp., The J. G., New York City.

FITTINGS (Wire Rope.)

Leschen & Sons Rope Co., A., St. Louis.

FLANGES (Iron and Steel.)

Amer. Cast Iron Pipe Co., Birmingham.
Dart Mfg. Co., E. M., Providence, R. I.

National Cast Iron Pipe Co., Birmingham, Ala.
Taylor Forge & Pipe Wks., Chicago, Ill.
U. S. Pipe & Foundry Co., Burlington, N. J.
Vest Mch. Co., Henry, Louisville, Ky.
—and Flanged Fittings.
Grinnell Co., Inc., Providence, R. I.

FLOOR (Cork Composition.)
Congoleum-Nairn Inc., Kearny, N. J.
—(Hardwood, Maple, Oak.)
Kirby Lumber Co., Houston, Tex.
Nashville Hardwood Flooring Co., Nashville, Tenn.

—(Linoleum).
Congoleum-Nairn Inc., Kearny, N. J.
—(Northern Hard Maple.)
Holt Hardwood Co., Oconto, Wis.

—(Open Steel.)
Blaw-Knox Co., Pittsburgh, Pa.
Irving Iron Works Co., Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.

—Covering.
Congoleum-Nairn Inc., Kearny, N. J.

—Hardener (Concrete.)
Sonneborn Sons, Inc., L., New York.
Stonhard Co., Phila., Pa.

—Plates and Stair Treads.
American Pressed Steel Co., Phila., Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—Steel (For Concrete Culverts, Roads, Streets.)
Blaw-Knox Co., Pittsburgh, Pa.

—Wax.
Congoleum-Nairn Inc., Kearny, N. J.

—(Wood) Preservative.
Stonhard Co., Phila., Pa.

FLUSH-TANK SIPHONS.
Pacific Flush-Tank Co., New York, N. Y.

FLYER PRESSERS.
Southern Spindle & Flyer Co., Charlotte, N. C.

FLYERS.
Southern Spindle & Flyer Co., Charlotte, N. C.

FORGINGS (Drop.)
Vest Mch. Co., Henry, Louisville, Ky.

FORMS, Steel (For Concrete, Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)
Blaw-Knox Co., Pittsburgh, Pa.

FOUNDATION MASONRY.
Calligan Co., A. H., Richmond, Va.

FOUNDRIES and Machine Shops.
Deemer Steel Casting Co., New Castle, Del.
General Machine Works, York, Pa.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
Goldens' Fdry. & Mch. Co., Columbus, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Moccasin Bushing Co., Chattanooga, Tenn.
Mountain States Steel Foundries Parkersburg, W. Va.

FOUNDRY Equipment and Supplies.
Chain Belt Co., Milwaukee, Wis.
Hill & Griffith Co., The Cincinnati, O.
Whiting Corp., Harvey, Ill.

—Facings (Talc and Soapstone.)
Hill & Griffith Co., The Cincinnati, O.

FREIGHT RATE ADJUSTMENTS.
Allen, Charles S., New York City.

FUMIGATORS (Fruit, Nuts, Nursery Stock, etc.)
Union Tank & Pipe Co., Los Angeles, Cal.

FURNACE LININGS.
North American Refractories Co., Cleveland, Ohio.

FURNACES (Industrial.)
Combustion Engr., Corp., New York City.
—(Water-Cooled.)
Combustion Engr. Corp., New York City.
Fuller Lehigh Co., Fullerton, Pa.

GALVANIZED Products.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Jos. P., Philadelphia, Pa.
—Steel and Iron.
American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Granite City Steel Co., Granite City, Ill.
Republic Steel Corp., Youngstown, Ohio.

GALVANIZING (Cadmium Plating.)
Birmingham Galvanizing Co., Birmingham, Ala.

—(Hot Dip.)
Bessemer Galvanizing Works, Birmingham, Ala.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Jos. P., Philadelphia, Pa.
Newport News Shipbuilding & Drydock Co., Newport News, Va.

GAS HOLDERS.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.

—Producers.
Gas-O-Flame Stove Works, Port Deposit, Md.
Morgan Construction Co., Worcester, Mass.
Wood & Co., E. D., Philadelphia, Pa.

GASOLINE and KEROSENE.
Gulf Refining Co., Pittsburgh, Pa.

GASOLINE SHOVELS (See Shovels.)

GATES (Automatic Drainage.)
Armco Culvert Mfrs. Assn., Middletown, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Dixie Culvert Mfg. Co., Little Rock, Ark.
Louisiana Corr. Culvert Co., Baton Rouge, La.
Tenn. Metal Culvert Co., Nashville, Tenn.
Western Metal Mfg. Co., Houston, Texas.

GAUGE GLASSES.
Jenkins Bros., New York, N. Y.

GEARS.
DeLaval Steam Turbine Co., Trenton, N. J.
Earle Gear & Machine Co., Phila., Pa.
General Electric Co., Schenectady, N. Y.
—(Worm Reduction.)
DeLaval Steam Turbine Co., Trenton, N. J.

GENERATORS, MOTORS (New.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Howell Electric Motors Co., Howell, Mich.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

—(Used.)
Electrical Equip. Co., Raleigh, N. C.
Gregory Electric Co., Chicago.
Nashville Ind. Corp., Old Hickory, Tenn.
Nussbaum & Co., V. M., Ft. Wayne, Ind.
O'Brien Machinery Co., Phila., Pa.
Randle Machinery Co., The Cincinnati, O.
Stewart Elec. Co., John A., Cincinnati.

GEOLOGISTS. (See Engineers, Geological.)

GLASS (Art.)
Blinswanger & Co., Memphis, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.

—(Plate.)
Blinswanger & Co., Inc., Memphis, Tenn.
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.

—(Window.)
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.

—(Wire.)
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Phila., Pa.

GRADERS (Elevating.)
Caterpillar Tractor Co., San Leandro, Calif.

—(One Man Motor.)
Riddell Co., W. A., Bucyrus, Ohio.

GRAPHITE.
Dixon Crucible Co., Jos., Jersey City, N. J.

GRATES and Grate Bars.
Schodde's Sons Co., J. S., Macon, Ga.
Vogt Machine Co., Henry, Louisville, Ky.

GRATING (Area, Flooring, Sidewalk.)
Bates Steel Corp., Walter, Gray, Ind.
Blaw-Knox Co., Pittsburgh, Pa.
Hendrick Mfg. Co., Carbondale, Pa.
Irving Iron Works, Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.

GRAVEL (Roofing and Road.)
American Limestone Co., Knoxville, Tenn.
Arundel Corp., The, Baltimore, Md.
Boxley & Co., W. W., Roanoke, Va.
Friend & Co., Inc., Petersburg, Va.

GREASE CUPS.
Lunkenheimer Co., The, Cincinnati, O.

GRILLES (Brass, Bronze, Steel, etc.)
Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

GRINDERS (Electric.)
Chicago Pneumatic Tool Co., New York.
—(Gypsum, Limestone, etc.)
Raymond Bros. Impact Pulv. Co., Chicago.

GRINDING MACHINERY (Flexible Shaft.)
Strand & Co., N. A., Chicago, Ill.

—Wheels.
Carborundum Co., Niagara Falls, N. Y.

GUARD RAIL (Road.)
National Traffic Guard Co., Atlanta.

GUNITE CONSTRUCTION.
Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
Gunite Conc. & Constr. Co., Kansas City.
Gunite Constr. Co., New York City.
Rust Engineering Co., Birmingham, Ala.

GUNPOWDER.
Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.

GUNS (Hydraulic.)
Georgia Iron Works, Augusta, Ga.

HANGARS (Airplane.)
Blaw-Knox Co., Pittsburgh, Pa.
Braden Steel Corp., Tulsa, Okla.
Ingalls Iron Works, Birmingham, Ala.

HANGERS (Door, All Kinds.)
Richards-Wilcox Mfg. Co., Aurora, Ill.
—(Line Shaft.)
American Pulley Co., Philadelphia, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.

HARBOR IMPROVEMENTS.
Arundel Corp., Baltimore, Md.
Atlantic Gulf & Pacific Co., New York.

HARDWARE (Door.)
Richards-Wilcox Mfg. Co., Aurora, Ill.

HEATERS (Asphalt.)
Honherst Co., Jos., Cincinnati, O.

HEATING Apparatus (Engineers and Contractors.)
Grinnell Co., Inc., Providence, R. I.
Poe Piping & Heating Co., Greenville, S. C.
Skinner Bros. Mfg. Co., St. Louis, Mo.
—Systems.
Skinner Bros. Mfg. Co., St. Louis, Mo.

HOISTING MACHINERY.
Lidgerwood Mfg. Co., Elizabeth, N. J.

HOISTS (Air Portable.)
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

—(Chain.)
Harrington Co., The, Philadelphia, Pa.

—(Electric.)
Harnischfeger Corp., Milwaukee, Wis.
Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.
Mundy Hoisting Engine Co., J. S., Newark, N. J.
Novo Engine Co., Lansing, Mich.
O. K. Clutch & Mch. Co., Columbia, Pa.
Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Gasoline.)
Clyde Iron Works Sales Co., Duluth, Minn.
Dake Engine Co., Grand Haven, Mich.
Mundy Hoisting Engine Co., J. S., Newark, N. J.
National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.
Novo Engine Co., Lansing, Mich.
O. K. Clutch & Mch. Co., Columbia, Pa.
Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Hand Power.)
O. K. Clutch & Mch. Co., Columbia, Pa.

—(Steam.)
Clyde Iron Works Sales Co., Duluth, Minn.
Dake Engine Co., Grand Haven, Mich.
Mundy Hoisting Engine Co., J. S., Newark, N. J.
Street Bros. Mch. Wks., Chattanooga, Tenn.

HOOPS, Bands, etc. (Galvanized.)
Connors Steel Co., Birmingham, Ala.

HOPPERS (Aggregate, Measuring and Weighing.)
Blaw-Knox Co., Pittsburgh, Pa.

HOSE (Rubber.)
Republic Rubber Co., Youngstown, Ohio.

HOTELS.
Heiss Hotel Systems, St. Louis, Mo.
Southern Hotel, The, Baltimore, Md.

HOUSE MOVING.
Eichleay, Jr. Co., John, Pittsburgh.

HULLS (Steel.)
American Steel Dredge Co., Fort Wayne, Ind.

HUMIDIFYING AND DRYING EQUIPMENT.
Grinnell Co., Inc., Providence, R. I.
Skinner Bros. Mfg. Co., St. Louis, Mo.

HYDRANTS (Fire.)
Ludlow Valve Mfg. Co., The, Troy, N. Y.
Myers & Bro. Co., The, F. E., Ashland, O.
Vogt Brothers Mfg. Co., Louisville, Ky.
Wood & Co., E. D., Philadelphia, Pa.

HYDRO - ELECTRIC POWER COMPANIES (Offering Industrial and Commercial Opportunities.)
Alabama Power Co., Birmingham, Ala.
Central Power & Light Co., San Antonio, Texas.
Georgia Power Co., Atlanta, Ga.
Texas Power & Light Co., Dallas, Texas.

ICE and Refrigerating Machinery and Supplies.
Ingersoll-Rand Co., New York, N. Y.
Vogt Mch. Co., Henry, Louisville, Ky.

INCINERATORS.
Duplex Hanger Co., Cleveland, Ohio.

INCORPORATORS.
Corporation Service Co., Wilmington, Del.
Delaware Registration Trust Co., Wilmington, Del.

INJECTORS.
Jenkins Bros., New York, N. Y.
Randle Machinery Co., The Cincinnati, O.

INSULATING MATERIALS.
General Electric Co., Schenectady, N. Y.
Okonite Co., New York, N. Y.

INVESTMENT SECURITIES.
Electric Bond & Share Co., New York.
Gay & Co., W. O., New York City.
Hanchett Bond Co., Inc., The, Chicago, Ill.
Mercantile Trust Co., Baltimore, Md.
Nuveen & Co., John, Chicago.
Peabody & Co., Chicago.
Provident Savings Bank & Trust Co., Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati, O.

IRON.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—(Ingot, For Culverts, etc.)
American Rolling Mill Co., Middletown, O.

JOINTS (Pipe.)
Leadite Co., The, Philadelphia, Pa.

In St. Louis

Hotel Mayfair....

8th and St. Charles

In the center of theatre and shopping districts. Floor lamps, fans, circulating ice water in every room. The quiet, refined atmosphere of an exclusive club—an hotel of distinction. Dining room. Coffee shop. Garage service.

400 ROOMS — \$3⁰⁰ to \$6⁰⁰
BATHS

Hotel Lennox....

9th and Washington

St. Louis' newest and smartest hotel opened September 3rd. In the heart of business district. Dining room. Coffee shop. Garage service.

400 Rooms with tub — \$3⁰⁰ to \$6⁰⁰
bath and shower

Hotel Kings-Way...

West Pine at Kingshighway

Opposite beautiful Forest Park. Near bus, street car and motor highways. 20 minutes from downtown. Club breakfasts, table d'hôte dinners. Rooms for two from \$4. Special rates for permanent guests.

Heiss Hotel System KMOX



JOINTITE

WATERTIGHT SEWER PIPE JOINT COMPOUND

Also Miller Flush-Tank Siphons, Automatic Sewage Ejectors, Convertible Diaphragm-Plunger Pumps, Sewage Disposal Apparatus.

(PACIFIC FLUSH-TANK CO.)

Write nearest office for catalog interested in.

4241 Ravenswood Ave.
CHICAGO

9 Park Place
NEW YORK

EARLE

Cut Spur, Bevel, Herringbone
and Worm Gears

All sizes. Every description. Operating Machinery for Bridges, etc. "Lea Simpler" Cold Metal Saws.

The Earle Gear & Machine Co.

4719 Stenton Avenue,
Philadelphia, Pa.

110 State St., Boston, Mass.
95 Liberty St., New York City

GEARS



CEMENT GUN CONSTRUCTION CO.

The Original

GUNITE

Contractors

Estimates and information cheerfully given

537 So. Dearborn St., Chicago, Ill.
Pittsburgh Branch New York Branch
Oliver Bldg. Grand Central Terminal



WINDOW
PLATE
ART

Richmond,
Va.

GLASS

ESTABLISHED 1872

BINSWANGERS & Co.
(INCORPORATED)

STORE FRONT CONSTRUCTION

MIRRORS
BEVELING
SKYLIGHT

Memphis,
Tenn.

Actinic Glass

for Textile Mills

Manufactured by

PENNSYLVANIA

WIRE GLASS CO.

Will materially reduce
radiant heat from
direct sunlight

Distributed by

**HIRES TURNER
GLASS COMPANY**

PHILADELPHIA, PENNA.

Rochester Washington Albany
Baltimore

or through any glass jobber

JOIST HANGERS.

Duplex Hanger Co., Cleveland, Ohio.

KETTLES (Pavers and Roofers.)

Hemmerl Co., Jos., Cincinnati, O.

LADDERS (Rolling.)

Myers & Bro. Co., The F. E., Ashland, O.

—(Wooden.)Dayton Safety Ladder Co., Cincinnati, O.
Patent Scaffolding Co., Chicago, Ill.**LAMPS (Incandescent.)**General Electric Vapor Lamp Co., Hoboken, N. J.
Western Electric Co., New York City.**LATH (Metal.)**

Ingalls Iron Works Co., Birmingham, Ala.

LATHES.

Sebastian Lath Co., Cincinnati, Ohio.

LIGHTING (Factory and Mill.)

General Electric Vapor Lamp Co., Hoboken, N. J.

—Fixtures (Electric.)Benson Brass & Chandelier Works, Kansas City, Mo.
Western Electric Co., New York City.**LININGS (Flue, Fire Clay.)**Lee Clay Products Co., Clearfield, Ky.
Owensboro Sewer Pipe Co., Owensboro, Ky.**—(Tube Mill.)**

Fuller Lehigh Co., Fullerton, Pa.

LINOLEUM (Battleship, Embossed Inlaid, Inlaid, Jaapa.)

Congoleum-Nairn Inc., Kearny, N. J.

LITHOGRAPHERS and ENGRAVERS.Smith & Son Co., Oscar T., Baltimore, Md.
Young & Selden Co., Baltimore, Md.**LOADING and UNLOADING MACHINERY (Portable.)**Barber-Greene Co., Aurora, Ill.
Northwest Engineering Co., Chicago, Ill.**LOCOMOTIVES (Compressed Air.)**

Porter Co., H. K., Pittsburgh, Pa.

—(Wireless Stored Steam.)

Porter Co., H. K., Pittsburgh, Pa.

—(Gasoline.)

Porter Co., H. K., Pittsburgh, Pa.

Whitcomb Co., Geo. D., Rochelle, Ill.

—(Industrial.)

Birmingham Rail & Locomotive Co., Birmingham, Ala.

Porter Co., H. K., Pittsburgh, Pa.

Southern Iron & Equipment Co., Atlanta.

Whitcomb Co., Geo. D., Rochelle, Ill.

—(Mining.)

Porter Co., H. K., Pittsburgh, Pa.

Whitcomb Co., Geo. D., Rochelle, Ill.

—(Railway.)

Porter Co., H. K., Pittsburgh, Pa.

Southern Iron & Equipment Co., Atlanta.

Whitcomb Co., Geo. D., Rochelle, Ill.

LOOM PICK COUNTER

Veeder-Root, Inc., Hartford, Conn.

LUBRICANTS.Dixon Crucible Co., Jos., Jersey City, N. J.
Gulf Refining Co., Pittsburgh, Pa.**LUBRICATORS (Force Feed.)**

Lunkenheimer Co., The, Cincinnati, O.

LUMBER (Ceiling, Flooring, Siding.)

Industrial Lumber Co., Elizabeth, La.

Kirby Lumber Co., Houston, Texas.

—(Creosoted.)

Amer. Creosote Wks., Inc., New Orleans, La.

Amer. Creosoting Co., Inc., Louisville, Ky.

Ayer & Lord Tie Co., Inc., Chicago.

Carolina Wood Preserving Co., Charleston, S. C.

Delaware Wood Preserving Co., Phila.

Eppinger & Russell Co., New York, N. Y.

Gulf States Creos. Co., Hattiesburg, Miss.

Savannah Creos. Co., Savannah, Ga.

—(Heavy Construction, Pitch, Pine, etc.)

Brooks-Scanlon Corp., Foley, Florida.

Industrial Lumber Co., Elizabeth, La.

Kirby Lumber Co., Houston, Texas.

—Yellow Pine.

Brooks-Scanlon Corp., Foley, Florida.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York City.

MACHINERY (Special.)

Bliss Co., E. W., Brooklyn, N. Y.

Earle Gear & Machine Co., Phila., Pa.

Fernholtz Machinery Co., St. Louis, Mo.

General Machine Works, York, Pa.

Whitting Corp., Harvey, Ill.

—and Supplies (New and Used.)

Electric Service Co., Cincinnati, Ohio.

Equip. Sales & Rentals Co., Pittsburgh.

Holmes Engineering Co., New York.

Marine Metal & Supply Co., New York.

Nashville Ind. Corp., Old Hickory, Tenn.

O'Brien Machinery Co., The, Phila., Pa.

Randle Machinery Co., The, Cincinnati, O.

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

Seyfert's Sons, Inc., L. F., Phila., Pa.

Zelnicker Supply Co., W. A., St. Louis.

MACHINE TENDERS (Steel.)

Angle Steel Steel Co., Plainwell, Mich.

—(Tools.)

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

Sebastian Lath Co., Cincinnati, Ohio.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.

O'Brien Machinery Co., Phila., Pa.

MAIL CHUTES.

Cutler Mail Chute Co., Rochester, N. Y.

MARBLE (Producers and Manufacturers.)

Georgia Marble Co., Tate, Ga.

MATERIAL ELEVATORS.

National Equipment Corp. (Inclw. C. H. & E.), Milwaukee, Wis.

METAL-Cutting Machinery.

Earle Gear & Machine Co., Phila., Pa.

—Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

MILL MACHINERY and SUPPLIES.

Lombard Iron Works & Supply Co., Augusta, Ga.

MINING MACHINERY.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

MIXERS.

National Equipment Corp. (Koehring, T. L. Smith, Kwik-Mix), Milwaukee, Wis.

—(Asphalt.)

Erie Machine Shops, Erie, Pa.

—(Hot.)

Koehring Co., Milwaukee, Wis.

—(Mortar.)

Chain Belt Co., Milwaukee, Wis.

Jaeger Machine Co., Columbus, Ohio.

—(Plaster.)

Blystone Mfg. Co., Cambridge Springs, Pa.

Chain Belt Co., Milwaukee, Wis.

Dunning & Boschert Press Co., Syracuse, N. Y.

Jaeger Machine Co., Columbus, Ohio.

MORTAR INGREDIENT.

Louisville Cement Co., Louisville, Ky.

MOTORS (Electric.)

Fairbanks, Morse & Co., Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Howell Electric Motors Co., Howell, Mich.

Western Electric Co., New York City.

Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

MOTOR TRUCKS.

International Harvester Co., of America, Inc., Chicago, Ill.

NAILS (Cut.)

Reading Iron Co., Reading, Pa.

—and Spikes.

American Steel & Wire Co., Balto., Md.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

NATURAL GAS COMPANIES.

(Offering Industrial and Commercial Opportunities.)

Arkansas Natural Gas Corp., Shreveport, La.

OIL (Fuel and Gas.)

Gulf Refining Co., Pittsburgh, Pa.

—Cups.

Lunkenheimer Co., The, Cincinnati, O.

ORE-WASHING MACHINERY.Georgia Iron Works, Augusta, Ga.
McLanahan Stone Machine Co., Hollidaysburg, Pa.**ORNAMENTAL BRONZE WORK.**

Heath Co., J. S., Waukegan, Ill.

Michaels Art Bronze Co., Covington, Ky.

—Iron Work.

Roanoke Iron & Bridge Wks., Roanoke, Va.

Snead Architectural Iron Works, Louisville, Ky.

Southern Engineering Co., Charlotte, N. C.

Stewart Iron Works Co., Cincinnati, O.

PACKAGE SERVICE (Corrugated Paper.)

Hinde & Dauch Paper Co., Sandusky, O.

PACKING (Asbestos, Metallic, Rubber, Leather, etc.)

Jenkins Bros., New York, N. Y.

Republic Rubber Co., Youngstown, Ohio.

—Protection (Freight Shipments.)

Kimberly Clark Corp., Chicago, Ill.

PAINT (Aluminum.)

Aluminum Co. of America, Pittsburgh, Pa.

—(Metal Surfaces.)

Aluminum Co. of America, Pittsburgh, Pa.

Dixon Crucible Co., Jos., Jersey City, N. J.

—(Mill White, For Interior.)

Aluminum Co. of America, Pittsburgh, Pa.

Sonneborn Sons, Inc., L. A., New York.

—(Preservative.)

Cabot, Inc., Samuel, Boston, Mass.

Foster Co., Benjamin, Philadelphia, Pa.

PANELBOARDS.

Adam Elec. Co., Frank, St. Louis.

PAPER BOXES (Corrugated, Shipping.)

Hinde & Dauch Paper Co., Sandusky, O.

PARTITIONS (Metal, Folding, Rolling.)

Kinnear Mfg. Co., The, Columbus, Ohio.

Lupton's Sons Co., David, Phila., Pa.

—(Sectionfold, Rolling, Wood.)

Wilson Corp., The, J. G. New York.

PATENT ATTORNEYS.

Buck, Sterling P., Washington, D. C.

Coleman, Watson E., Washington, D. C.

Easton, Paul E., Charlotte, N. C.

Sarnett, Edward C., Washington, D. C.

Seymour & Bright, Washington, D. C.

PATTERNS (Drawing, etc.)

Haas Pattern Co., A. W., Atlanta, Ga.

PAVING BLOCKS (Creosoted Wood.)

American Creosote Works, New Orleans.

—(Brick.)

National Paving Brick Mfrs. Assn., Washington, D. C.

—Mixers.

National Equipment Corp. (Koehring, T. L. Smith), Milwaukee, Wis.

—Plant (Asphalt.)

Simplicity System Co., Chattanooga, Tenn.

PENSTOCKS.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Smith Co., S. Morgan, York, Pa.

PERFORATED METAL.

Chicago Perforating Co., Chicago, Ill.

Erie Perforating Co., Rochester, N. Y.

Harrington & King Perf. Co., Chicago.

Hendrick Mfg. Co., Carbondale, Pa.

Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

Mundt & Sons, Charles, Jersey City, N. J.

PETROLEUM REFINERS.

Gulf Refining Co., Pittsburgh, Pa.

PHOSPHATE ACID.

Davison Chemical Co., Baltimore, Md.

—(Machinery.)

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

PIG-IRON.

Republic Steel Corp., Youngstown, Ohio.

Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.**PILE SHORES.**

Janney, Jr., Jos. A., Phila., Pa.

PILING (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville.

Ayer & Lord Tie Co., Inc., Chicago.

Carolina Wood Preserving Co., Charleston, S. C.

Savannah Creosoting Co., Inc., Savannah.

Wales Wood-Preserving Co., Norfolk, Va.

—(Steel Sheet.)

Carnegie Steel Co., Pittsburgh, Pa.

Zelnicker Supply Co., W. A., St. Louis.

PILLOW BLOCKS.

Golden's Fdry. & Mch. Co., Columbus, Ga.

PIPE.

Albert & Davidson Pipe Corp., Brooklyn, N. Y.

Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.

Armco Culvert Mfrs. Assn., Middletown, Ohio.

Birmingham Boiler & Engr. Co., Birmingham, Ala.

Central Pipe & Sup. Co., Charleston, W. Va.

Greenpoint Iron & Pipe Co., Inc., Brooklyn, N. Y.

Hudson Pipe & Sup. Co., Bayonne, N. J.

Maryland Pipe & Steel Corp., Baltimore, Md.

National Tube Co., Pittsburgh, Pa.

Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

Power Piping Co., Pittsburgh, Pa.

—(Cast Iron.)

Amer. Cast Iron Pipe Co., Birmingham.

Cast Iron Pipe Research Assn., Chicago.

Central Foundry Co., The, New York, N. Y.

Glamorgan Pipe & Fdry. Co., Lynchburg, Va.

National Cast Iron Pipe Co., Birmingham, Ala.

U. S. Pipe & Foundry Co., Burlington, N. J.

—(Dredge.)

Abendroth & Root Mfg. Co., New York.

—(Hammer-Welded.)

National Tube Co., Pittsburgh, Pa.

—(Iron and Steel.)

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—(Riveted.)

Abendroth & Root Mfg. Co., New York.

—(Second-Hand.)

Albert & Davidson Pipe Corp., Brooklyn, N. Y.

Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.

Central Pipe & Sup. Co., Charleston, W. Va.

Greenpoint Iron & Pipe Co., Inc., Brooklyn, N. Y.

Hudson Pipe & Supply Co., Bayonne, N. J.

Marine Metal & Supply Co., New York.

Maryland Pipe & Steel Corp., Baltimore, Md.

—(Spiral Riveted.)

Abendroth & Root Mfg. Co., New York.

Taylor Forge & Pipe Wks., Chicago, Ill.

—(Steel.)

Bethlehem Steel Co., Bethlehem, Pa.

National Tube Co., Pittsburgh, Pa.

Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

Power Piping Co., Pittsburgh, Pa.

Republic Steel Corp., Youngstown, Ohio.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Wrought Iron.)

Reading Iron Co., Reading, Pa.

—Benders and Headers.

Grinnell Co., Inc., Providence, R. I.

—Bending Machines.

American Pipe Bending Machine Co., Boston, Mass.

—Coatings.

Foster Co., Benjamin, Philadelphia, Pa.

—Fittings.



The "62"—a New Big Super- Capacity Loading Tool

THIS is the New Big Barber-Greene, Super-Capacity, Model 62 Bucket Loader.

It is built on the idea of bringing high loading speeds and big capacity within the reach of everyone who handles bulk materials.

Its speed sends trucks on their way in much shorter time.

Yet it does not represent an excessive investment.

It has all the features that have helped to make Barber-Greene standard for all loading and batching jobs.

In addition it has new features, and is built upon a new size scale to bear out its name: *the Super-Capacity Bucket Loader*.

Write today for complete information.

BARBER  **GREENE**

560 W. Park Avenue, Aurora, Illinois

Super-capacity, 2 cubic yards and more per minute.

Positive crowding speed that forces the loading buckets and feeding discs into the material pile or bank.

2 bucket line speeds for normal and high speed loading—shift is by lever transmission.

Disc-feed, with two flat rotating discs sliding beneath the pile to pull aggregates into the buckets, is standard—positive feed is optional.

Ample clearance for largest trucks, even when the loader is carrying screens and hoppers, because of the long boom.

Protected against jamming damage by the patented Barber-Greene Overload release that lets go if the buckets jam—yet re-engages automatically.

Full-floating scraper clean-up riding behind the disc feed assures perfect clean-up of material.

The B-G patented Floating Boom rides freely over rough spots and always transfers all thrust directly back to the loader chassis and crawlers—this strain is not carried by the top frame.

Super-capacity buckets of special steel assure high loading speeds without excessive bucket travel speed.

Crawler mounted three speeds forward—two speeds reverse.

Can be equipped with:

Leahy high frequency screen for separating sand and gravel—screen driven by loader engine.

Grizzly and non-vibrating screens.

Various types of batchers or strike-off hoppers up to 1 cubic yard capacity.

PLATES (Steel.)

Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Granite City Steel Co., Granite City, Ill.
Gulf States Steel Co., Birmingham, Ala.
Ingersoll-Rand Co., New York, N. Y.
Tennessee Coal, Iron & Railroad Co., Birmingham.

PNEUMATIC TOOLS.

Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.

POLES (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Brown Wood Preserving Co., Louisville, Ky.
Carolina Wood Preserving Co., Charleston, S. C.
Savannah Creosoting Co., Savannah, Ga.
Taylor-Colquhitt Co., Spartanburg, S. C.

—(Steel.)

Bates Steel Corp., Walter, Gray, Ind.

—(Tubular, Steel.)

National Tube Co., Pittsburgh, Pa.

—(Zinc Meta Arsenite Treated.)
Curtin-Howe Corp., New York City.

POLISHING MACHINERY.

(Wheels, Blocks.)
Carborundum Co., Niagara Falls, N. Y.

PORTABLE HOUSES (Metal.)

Braden Steel Corp., Tulsa, Okla.

POST CAPS.

Duplex Hanger Co., Cleveland, Ohio.

POSTS (Cast Iron, Railway and Highway.)
U. S. Pipe & Foundry Co., Burlington, N. J.

POWER TRANSMISSION MACHINERY.

American Pulley Co., Philadelphia, Pa.
Diamond Chain & Mfg. Co., Indianapolis.
Golden's Fdy. & Mch. Co., Columbus, Ga.
Morse Chain Co., Ithaca, N. Y.
O'Brien Machinery Co., Phila., Pa.
Schofield's Sons Co., J. S. Macon, Ga.
Wood's Sons Co., T. B. Chambersburg, Pa.

—(Pumps.)

Luitwieler Pumping Engine Co., Rochester, N. Y.

PREHEATERS (Air.)

Combustion Engr. Corp., New York City.

PRESSES (Baling, Cottonseed Oil, Hydraulic and Power.)

Dunning & Roschert Press Co., Inc., Syracuse, N. Y.
Ripley Foundry & Machine Co., Ripley, O.
—(Metal Stamping.)
Bliss Co., E. W., Brooklyn, N. Y.

PRINTERS (Book, Catalog, Job.)
Smith & Son Co., Oscar T., Baltimore Md.
Young & Selden Co., Baltimore, Md.

PRODUCER (Gas Machines.)

Gas-O-Flame Store Works, Port Deposit, Md.
Morgan Construction Co., Worcester, Mass.
Wood & Co., B. D., Phila., Pa.

PULLER-JACKS.

Edelblute Co., T. H., Pittsburgh, Pa.

PULLEYS (Friction Clutch.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Schultz & Son, A. L., Chicago, Ill.
Wood's Sons Co., T. B., Chambersburg, Pa.

—(Motor and Machine.)
American Pulley Co., Philadelphia, Pa.

—(Steel Split.)
American Pulley Co., Phila., Pa.

—(Shafting and Hangers.)
American Pulley Co., Phila., Pa.

Goldens' Fdy. & Mch. Co., Columbus, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.

PULVERIZED COAL EQUIPMENT.

Combustion Engr. Corp., New York, N. Y.
Fuller Lehigh Co., Fullerton, Pa.
Whiting Corp., Harvey, Ill.

PULVERIZERS (See Crushing and Pulverizing Machinery.)

PUMPING MACHINERY.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.

Chain Belt Co., Milwaukee, Wis.
Cook, Inc., A. D., Lawrenceburg, Ind.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Keystone Pump & Drill Co., Beaver Falls, Pa.

Luitwieler Pumping Engine Co., Rochester, N. Y.
Myers & Bro. Co., The F. E., Ashland, Ohio.

National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.
Platt Iron Works, Dayton, Ohio.

Union Steam Pump Co., Battle Creek, Mich.
Viking Pump Co., Cedar Falls, Iowa.
Virginia Mch. & Well Co., Richmond, Va.

PUMPS (Air.)

Manistee Iron Works Co., Manistee, Mich.
—(Air Lift.)
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

—(Boiler Feed.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Wks., Medina, N. Y.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Manistee Iron Works Co., Manistee, Mich.
Myers & Bro. Co., The F. E., Ashland, O.

—(Centrifugal.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Emerson Pump & Valve Co., Alexandria, Va.
Erie Pump & Engine Wks., Medina, N. Y.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Jaeger Machine Co., Columbus, Ohio.
Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.
Morris Machine Wks., Baldwinville, N. Y.
Novo Engine Co., Lansing, Mich.
Union Steam Pump Co., Battle Creek, Mich.

—(Contractors.)

Emerson Pump & Valve Co., Alexandria, Va.
Erie Pump & Engine Wks., Medina, N. Y.
Novo Engine Co., Lansing, Mich.

—(Deep Well.)

Cook, Inc., A. D., Lawrenceburg, Ind.
Keystone Pump & Drill Co., Beaver Falls, Pa.
Layne & Bowler, Inc., Memphis, Tenn.
Luitwieler Pumping Engine Co., Rochester, N. Y.
Novo Engine Co., Lansing, Mich.

—(Diaphragm.)

Novo Engine Co., Lansing, Mich.

—(Hydraulic.)

Dunning & Roschert Press Co., Inc., Syracuse, N. Y.

—(Power.)

Platt Iron Works, Dayton, Ohio.
Sterling Engine Co., Buffalo, N. Y.

—(Pulverized Coal.)

Fuller Lehigh Co., Fullerton, Pa.
—(Rotary.)
Viking Pump Co., Cedar Falls, Iowa.

—(Sand and Dredging.)

Ellis Machine Corp., Baltimore, Md.
Erie Pump & Engine Wks., Medina, N. Y.
Georgia Iron Works, Augusta, Ga.

—(Steam.)

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
Emerson Pump & Valve Co., Alexandria, Va.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.

—(Vacuum.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

—(Water Works.)

Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.

PUNCHING AND SHEARING MACHINERY.

Bliss Co., E. W., Brooklyn, N. Y.
Whitney Metal Tool Co., Rockford, Ill.

RACK RAKES.

Newport News Shipbuilding & Drydock Co., Newport News, Va.

RADIATOR ENCLOSURES.

Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

RAILINGS (Iron Pipe.)

Pipe Railing Constr. Co., Long Island City, N. Y.

—(and Grilles, Iron and Brass, (Banks and Offices.)
Ludlow Saylor Wire Co., The St. Louis, Mo.

RAILROAD Equipment and Supplies (New.)

Robinson & Orr, Pittsburgh, Pa.
Whiting Corp., Harvey, Ill.

—Equipment and Supplies (Used.)

Birmingham Rail & Loco. Co., Birmingham.
Equip. Sales & Rentals Co., Pittsburgh.
Levis & Co., Henry, Philadelphia, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron and Equip. Co., Atlanta.
Zelnicker Supply Co., W. A., St. Louis.

—(Frogs and Switches.)

Bethlehem Steel Co., Bethlehem, Pa.
Frank, M. K., Pittsburgh, Pa.
Koppel Ind. Car & Equip. Co., Koppel, Pa.
Robinson & Orr, Pittsburgh, Pa.

RAILROADS — (Offering Industrial, Agricultural and Commercial Opportunities.)

Atlanta and West Point R. R., Atlanta.
Central of Georgia Rwy., Savannah, Ga.
Missouri - Kansas - Texas Lines, Dallas, Texas.
Missouri Pacific Lines, St. Louis, Mo.
Model Land Company, Flagler System, St. Augustine, Fla.
Norfolk & Western Railway, Roanoke, Va.
Tennessee Central Railway, Nashville, Tenn.

RAILS (New and Used.)

Birmingham Rail & Locomotive Co., Birmingham, Ala.
Carnegie Steel Co., Pittsburgh, Pa.
Frank, M. K., Pittsburgh, Pa.
Levis & Co., Henry, Philadelphia, Pa.
Perry, Burton, Doane Co., Philadelphia.
Robinson & Orr, Pittsburgh, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron & Equip. Co., Atlanta, Ga.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Weller & Co., Birmingham, Ala.
Zelnicker Supply Co., W. A., St. Louis.

RAILWAYS (Industrial.)

Easton Car & Construction Co., Easton, Pa.
Koppel Ind. Car & Equip. Co., Koppel, Pa.

—(Marine.)

Charleston Dry Dock and Machine Co., Charleston, S. C.

RECEPTACLES (Self-closing — Waste Paper.)

Whitaker Paper Co., Baltimore, Md.

REELS AND SPOOLS (Pressed Metal.)

American Pulley Co., Philadelphia, Pa.

REFRACATORIES.

Harbison-Walker Refractories Co., Pittsburgh.
North American Refractories Co., Cleveland, Ohio.
Taylor Sons Co., Charles, Cincinnati.

REFRIGERATING Machinery (See Ice and Refrigerating Machinery and Supplies.)**REINFORCING for Concrete.**

American Steel and Wire Co., Balto., Md.
Carnegie Steel Co., Pittsburgh, Pa.
Connor Steel Co., Birmingham, Ala.
Dietrich Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Knoxville Iron Co., Knoxville, Tenn.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Southern Engineering Co., Charlotte, N. C.

RESURFACING MATERIALS (Floor, Roof and Roadways.)

Stonhard Co., Phila., Pa.

RETORTS (Special Process— Riveted or Welded.)

Birge Boiler Works, Akron, Ohio.

RIVER & HARBOR IMPROVEMENTS, (Dredging, Docks, Wharves, etc.)

Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.
Kansas City Bridge Co., Kansas City.

RIVETS.

Russell, Burdell & Ward Bolt & Nut Co., Port Chester, N. Y.

ROAD and Street Machinery.

Acme Road Mchry. Co., Frankfort, N. Y.
Austin-Western Road Mchry. Co., Chicago.

Blaw-Knox Co., Pittsburgh, Pa.
Buffalo-Springfield Roller Co., Springfield, O.
Caterpillar Tractor Co., San Leandro, Cal.
Erie Machine Shops, Erie, Pa.
Huber Mfg. Co., Tbs, Marion, Ohio.
Universal Crane Co., Lorain, Ohio.

—and Street Material.

Boxley & Co., W. W., Roanoke, Va.
Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.
Woodstock Slag Corp., Birmingham, Ala.

—Graders and Scrapers.

Acme Road Mchry. Co., Frankfort, N. Y.
Austin-Western Road Mchry. Co., Chicago.
Caterpillar Tractor Co., San Leandro, Cal.

—Oils and Preservatives.

Gulf Refining Co., Pittsburgh, Pa.

—Reinforcement (Welded Fabric.)

American Steel & Wire Co., Balto., Md.

—Rollers (Steam and Gasoline.)

Acme Road Mchry. Co., Frankfort, N. Y.
Austin-Western Road Mchry. Co., Chicago.
Buffalo-Springfield Roller Co., Springfield, O.

—Erie Machine Shops, Erie, Pa.

Huber Mfg. Co., Tbs, Marion, Ohio.

—Rollers (For Concrete Work.)

Macon Concrete Roller Co., Macon, Ga.

—Scarifiers.

Austin-Western Road Mchry. Co., Chicago.
Buffalo-Springfield Roller Co., Springfield, O.

ROOFING (Ready Prepared, Felt, Tar, Asbestos, Asphalt.)

Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.
Eternit, Inc., St. Louis, Mo.

—and Siding (Composition.)

Eternit, Inc., St. Louis, Mo.

—and Siding (Metal.)

American Rolling Mill Co., Middletown, O.
American Sheet and Tin Plate Co., Pittsburgh, Pa.
Milcor Steel Co., Milwaukee, Wis.
Moeschl-Edwards Corr. Co., Cincinnati, O.
Republic Steel Corp., Youngstown, Ohio.
Robertson Co., H. H., Pittsburgh.
Ryerson & Son, Jos. T., St. Louis and New York.
Youngstown Sheet and Tube Co., Youngstown, O.

—Tile, Cement (Interlocking Flat, Channel Glass.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

—Tiles.

Amer. Cement Tile Mfg. Co., Pittsburgh.

ROPE (Manilla, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis.

—Drives.

Wood's Sons Co., T. B., Chambersburg, Pa.

RULES (Steel.)

Lufkin Rule Co., Saginaw, Mich.

SAND.

Arundel Corp., Baltimore, Md.
Friend & Co., Inc., Petersburg, Va.

SANITARY Drinking Fountains.

Bundle-Spence Mfg. Co., Milwaukee, Wis.

SASH (Industrial.)

Detroit Steel Products Co., Detroit, Mich.

—(Operating Devices.)

Detroit Steel Products Co., Detroit, Mich.

—(Steel.)

Detroit Steel Products Co., Detroit, Mich.

—(Steel, Basement, Ventilating.)

Detroit Steel Products Co., Detroit, Mich.

SAWMILL Machinery.

Schofield's Sons Co., J. S., Macon, Ga.

SAW EIGS.

National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.

SAWS. (Cold Metal.)

Earle Gear and Machine Co., Phila., Pa.

—(Portable, Electric, Hand.)

Wapwat, Incorporated, Pittsburgh, Pa.

SCAFFOLDING (Wooden.)

Patent Scaffolding Co., Chicago, Ill.

SCALES (Industrial, Platform.)

American Iron Scale Co., New York City.

—(Textile.)
American Kren Scale Co., New York City.

SCHOOLS (Correspondence.)
International Correspondence Schools, Scranton, Pa.

SCOOPS (Hand.)
American Mfg. Co., Chattanooga, Tenn.
—(Wheel.)
Riddell Co., W. A., Bucyrus, Ohio.

SCRAPERS (Drag and Wheel.)
Austin-Western Road Machy. Co., Chicago.
Sauerman Bros., Chicago, Ill.

SCRAP IRON AND STEEL.
Huntz Sons, M. J., Philadelphia, Pa.
Perry, Buxton, Doane Co., Philadelphia.
Smith & Co., W. M., Birmingham, Ala.

SCREENING (For Concrete and Road Construction.)
American Limestone Co., Knoxville, Tenn.

SCREENS (Sand, Gravel, Stone, Coal, Ore, etc.)
Chicago Perforating Co., Chicago, Ill.
Erdie Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Ludlow Saylor Wire Co., The St. Louis, Mo.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Mundt & Sons, Charles, Jersey City, N. J.
Universal Crusher Co., Cedar Rapids, Iowa.

SCREW-Machine Products.
Progressive Mfg. Co., Torrington, Conn.

SCREWS (Machine.)
Progressive Mfg. Co., Torrington, Conn.

SEAWALLS.
Shore-Line Builders, Inc., Jacksonville, Fla.

SEPARATORS (Dust.)
Raymond Bros., Impact Pair. Co., Chicago.

SEWAGE Disposal Apparatus.
Pacific Flush-Tank Co., New York, N. Y.

SEWER Joint Compounds.
Pacific Flush-Tank Co., New York, N. Y.
—(Pipe (Vitrified).)
Bannon Pipe Co., Louisville, Ky.
Cambridge Clay Products Co., Blackfork, O.
Doe Co., Wm. R., Oak Hill, Ohio.
Lee Clay Products Co., Clearfield, Ky.
Owensboro Sewer Pipe Co., Owensboro, Ky.

SEWER PIPE MACHINERY (Concrete.)
Quinn Wire & Iron Works, Boone, Iowa.

SHADES (Offset.)
Hough Shade Corp., Chicago, Ill.

SHAFTING.
Ryerson & Sons, Inc., Jos. T., St. Louis and New York.
—(Cold Rolled.)
Bliss & Laughlin, Inc., Harvey, Ill.
—(Flexible.)
Strand & Co., N. A., Chicago, Ill.
—(Material (Tubular).)
National Tube Co., Pittsburgh, Pa.

SHARPENING Stones.
Carborundum Co., Niagara Falls, N. Y.

SHEET Metal Work.
National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.
Skinner Bros. Mfg. Co., St. Louis, Mo.
—Metal Working Machinery.
Bliss Co., E. W., Brooklyn, N. Y.
Whitney Metal Tool Co., Rockford, Ill.
Yoder Co., The, Cleveland, Ohio.
—Steel and Iron.
American Rolling Mill Co., Middletown, O.
American Sheet and Tin Plate Co., Pittsburgh, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Granite City Steel Co., Granite City, Ill.
Gulf States Steel Co., Birmingham, Ala.
Republic Steel Corp., Youngstown, Ohio.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, O.

SHEETS (Asbestos.)
Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.
Eternit, Inc., St. Louis, Mo.

—(Steel—Asbestos Covered).
Robertson Co., H. H., Pittsburgh, Pa.

SHELVING (Unit.)
Lupton's Sons Co., David, Phila., Pa.

SHINGLES (Asbestos.)
Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.
Eternit, Inc., St. Louis, Mo.
—(Stain.)
Cabot, Inc., Samuel, Boston, Mass.

SHIPPING CARTONS (Corrugated Paper.)
Hinde & Dauch Paper Co., Sandusky, O.

SHOVELS (Hand.)
American Mfg. Co., Chattanooga, Tenn.
—(Steam, Gas and Electric Power.)
Bucyrus-Erie Co., Erie, Penna.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland, O.
National Equipment Corp. (Koehring, Insley), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
Universal Power Shovel Co., Milwaukee, Wis.

SHUTTERS (Steel.)
Merchant & Evans Co., Philadelphia, Pa.
—(Steel and Wood Bifolding).
Kinneer Mfg. Co., The, Columbus, Ohio.

SILICATE OF SODA.
Grasselli Chemical Co., Inc., Birmingham, Ala.

SITES (Manufacturing.)
Alabama Power Co., Birmingham, Ala.
Arkansas Natural Gas Corp., Shreveport, La.
Atlanta and West Point R. R., Atlanta.
Brown & Co., Chattanooga, Tenn.
Central of Georgia Rwy., Savannah, Ga.
Central Power & Light Co., San Antonio.
Fort Worth Chamber of Commerce, Fort Worth, Texas.
Galveston City of, Galveston, Texas.
Georgia Power Co., Atlanta, Ga.
Jacksonville, City of Jacksonville, Florida.
Missouri - Kansas - Texas Lines, Dallas, Texas.
Missouri Pacific Line, St. Louis, Mo.
Model Land Company, (Flagler System), St. Augustine, Fla.
Norfolk & Western Railway, Roanoke, Va.
Tennessee Central Railway, Nashville, Tenn.
Texas Power & Light Co., Dallas, Texas.

SKYLIGHTS.
Milcor Steel Co., Milwaukee, Wis.
Robertson Co., H. H., Pittsburgh, Pa.

SLABS (Concrete Floor.)
American Cement Tile Mfg. Co., Pittsburgh, Pa.
—(Concrete Roof).
American Cement Tile Mfg. Co., Pittsburgh, Pa.

SLAG, For Concrete.
Bloss-Sheffield Steel and Iron Co., Birmingham, Ala.
Woodstock Slag Corp., Birmingham, Ala.
—(Furnace).
Bloss-Sheffield Steel and Iron Co., Birmingham, Ala.
Woodstock Slag Corp., Birmingham, Ala.

SLINGS (Chain.)
Woodhouse Chain Works, Trenton, N. J.
—(Wire Rope).
Reehling's Sons Co., John A., Trenton, N. J.

SLUICE GATES AND APPLIANCES.
Smith Co., S. Morgan, York, Pa.

SNATCH BLOCKS (For Wire and Manila Rope.)
Patterson Co., W. W., Pittsburgh.

SPADES.
American Mfg. Co., Chattanooga, Tenn.

SPEED REDUCERS.
Barle Gear & Mach. Co., Phila., Pa.
Morse Chain Co., Ithaca, N. Y.

SPIKES, (Railroad, Ship.)
Bethlehem Steel Co., Bethlehem, Pa.
Republic Steel Corp., Youngstown, Ohio.
Sweet's Steel Co., Williamsport, Pa.

SPINNINGS (Metal for Aircraft.)
Benson Brass & Chandelier Works, Kansas City, Mo.

SPRINGS (Machinery, Railway, Spiral Steel.)
American Steel & Wire Co., Balto., Md.
Raymond Mfg. Co., Corry, Pa.

—(Wire—All Kinds.)
American Steel & Wire Co., Balto., Md.

SPRINKLERS (Automatic Fire.)
Grinnell Co., Inc., Providence, R. I.

SPROCKETS.
Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

STACKS (Iron and Steel.)
Biggs Boiler Works Co., Akron, Ohio.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge and Iron Works, Atlanta.
Downingtown Iron Wks., Downingtown, Pa.
Hammond Iron Works, Warren, Pa.
Hedges Walsh Weldner Co., Chattanooga, Tenn.
Ingalls Iron Works Co., Birmingham, Ala.
Lombard Iron Works & Supply Co., Augusta, Ga.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schonfeld's Sons Co., J. S., Macon, Ga.
U. S. Pipe & Foundry Co., Burlington, N. J.
Virginia Bridge & Iron Co., Roanoke, Va.

STAINS (Shingle, Woodwork.)
Cabot, Inc., Samuel, Boston, Mass.

STAIR Steps (Safety.)
Irving Iron Works Co., Long Is. City, N.Y.
—Treads.
Bates Steel Corp., Walter, Gray, Ind.
Central Iron & Steel Co., Harrisburg, Pa.

STAMPING (Sheet Metal.)
American Pulley Co., Philadelphia, Pa.
—Steel (All Kinds.)
Commercial Shearing & Stamping Co., Youngstown, Ohio.

STANDPIPES.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Hammond Iron Works, Warren, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

STATIONERS (Envelopes, Letter and Billheads, etc.)
Smith & Son Co., Oscar T., Baltimore, Md.
Young & Selden Co., Baltimore, Md.

STEAM SHOVELS.
Bucyrus-Erie Co., Erie, Pa.
Thew Shovel Co., The, Lorain, Ohio.

STEAM (Specialties.)
Jenkins Bros., New York, N. Y.
Lunkensheimer Co., The, Cincinnati, O.
Mueller Co., Decatur, Ill.
—Traps.
Jenkins Bros., New York, N. Y.

STEEL.
Bethlehem Steel Co., Bethlehem, Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Dietrich Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Republic Steel Corp., Youngstown, Ohio.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Alloy.)
Timken Roller Bearing Co., Canton, Ohio.
—(Cold Drawn).
Bliss & Laughlin, Inc., Harvey, Ill.
—(Cold Rolled).
American Steel & Wire Co., Balto., Md.
Bliss & Laughlin, Inc., Harvey, Ill.
—(Information Only).
American Institute of Steel Construction, Inc., New York City.

—(Special Analysis).
Timken Roller Bearing Co., Canton, Ohio.
—(Tool, High Speed).
Bethlehem Steel Co., Bethlehem, Pa.
—Buildings (Designers and Builders.)

American Bridge Co., New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.
Carolina Steel & Iron Co., Greensboro, N. C.
Champion Bridge Co., Wilmington, O.
Eichleay, Jr., Co., John, Pittsburgh.
Ingalls Iron Works Co., Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.
Phoenix Iron Co., The, Phila., Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Richmond Struc. Steel Co., Richmond, Va.
Virginia Bridge & Iron Co., Roanoke, Va.
—Forms (Curb, Gutter, Sidewalk, Road).
Blaw-Knox Co., Pittsburgh, Pa.
—Plate Construction (Riveted or Welded).
Biggs Boiler Works Co., Akron, Ohio.

Birmingham Boiler & Engr. Co., Birmingham, Ala.
Bristol Steel & Iron Works, Inc., Bristol, Va.
Carolina Steel & Iron Co., Greensboro, N. C.
Central Iron & Steel Co., Harrisburg, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Combustion Engr. Corp., New York City.
Hammond Iron Works, Warren, Pa.
Hedges Walsh Weldner Co., Chattanooga, Tenn.
Ingalls Iron Works Co., Birmingham, Ala.
Mecklenburg Iron Works, Charlotte, N. C.
Phoenix Iron Co., The, Phila., Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

STOKERS (Mechanical.)
Babcock & Wilcox Co., The, New York.
Combustion Engr. Corp., New York City.
Whiting Corp., Harvey, Ill.

STORAGE Batteries.
Electric Storage Battery Co., Philadelphia.
—Bins (Steel).
Blaw-Knox Co., Pittsburgh, Pa.

STRIPS (Steel.)
American Steel & Wire Co., Baltimore.

STRUCTURAL STEEL (Hot Galvanized.)
Bessemer Galvanizing Works, Birmingham.

—and Iron.
American Bridge Co., New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Bristol Steel & Iron Works, Inc., Bristol, Va.
Carroll Steel Co., Pittsburgh, Pa.
Carolina Steel & Iron Co., Greensboro, N. C.
Champion Bridge Co., Wilmington, Ohio.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Converse Bridge & Steel Co., Chattanooga, Tenn.
Dietrich Brothers, Baltimore, Md.
Eichleay, Jr., Co., John, Pittsburgh.
Erie Steel Constr. Co., Erie, Pa.
Ingalls Iron Works Co., Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.
Nashville Bridge Co., Nashville, Tenn.
Phoenix Iron Co., The, Phila., Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Republic Steel Corp., Youngstown, Ohio.
Richmond Struc. Steel Co., Richmond, Va.
Roanoke Iron & Bridge Works, Inc., Roanoke, Va.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Snead Architectural Iron Works, Louisville, Ky.
Southern Engineering Co., Charlotte, N. C.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

SULPHATE OF ALUMINA.
Grasselli Chemical Co., Inc., Birmingham, Ala.

SULPHIDE OF SODA.
Grasselli Chemical Co., Inc., Birmingham, Ala.

SULPHURIC ACID.
Davison Chemical Co., The, Balto., Md.
Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

SUPER-HEATERS (Steam.)
Babcock & Wilcox Co., The, New York.

SURVEYS (Industrial.)
Dane-Wolfe Co., Washington, D. C.
MacElwee & Crandall, Inc., Cambridge, Mass.
Technical Service Co., New York, N. Y.

—Quantity.
Rowan, W. E., Charlotte, N. C.
Spring, Charles Herbert, Greensboro, N. C.

SURVEYING INSTRUMENTS.
Weber Co., Inc., F., Philadelphia, Pa.

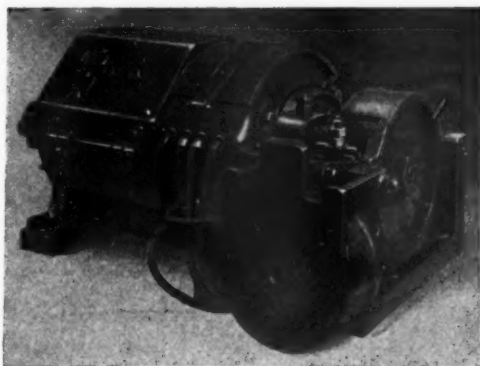
SWINGING ENGINES.
Dake Engine Co., Grand Haven, Mich.

SWITCHBOARDS, SWITCHES, ETC.
Adam Elec. Co., Frank, St. Louis.
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

SYSTEMS (Business.)
Ernst & Ernst, New York, N. Y.

TACKLE BLOCKS (For Wire and Manila Rope.)
Patterson Co., W. W., Pittsburgh.

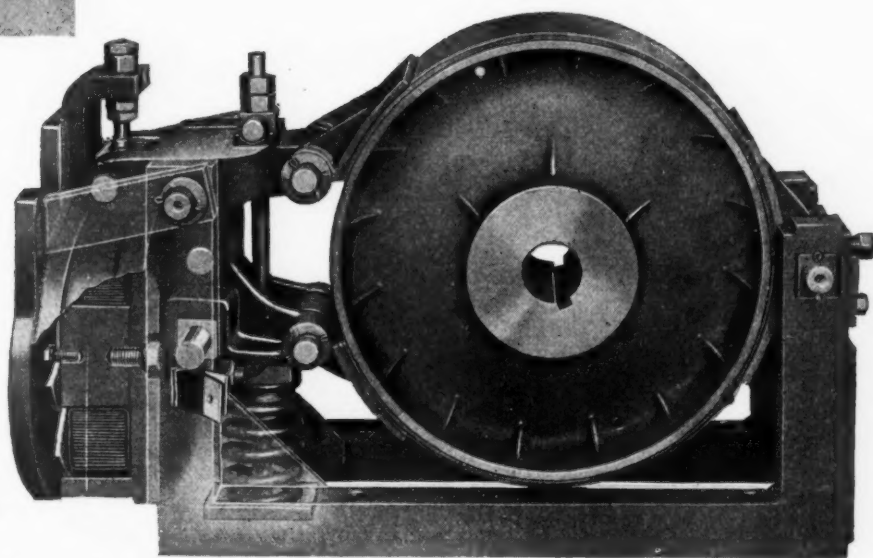
- TANKS (Air Compressor.)**
Air-Tight Steel Tank Co., Pittsburgh, Pa.
Seafie & Sons, Wm. B. Oakmont, Pa.
Titusville Iron Works Co., Titusville, Pa.
- (Elevated Steel.)
Caldwell Co. Inc., W. E. Louisville, Ky.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Cole Mfg. Co., R. D., Newnan, Ga.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schonfeld's Sons Co., J. S., Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.
- (Elevated Wood.)
Caldwell Co. Inc., W. E. Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Woolford Wood Tank Mfg. Co., G., Paschall P. O., Philadelphia.
- (Iron and Steel.)
Air-Tight Steel Tank Co., Pittsburgh, Pa.
American Bridge Co., New York, N. Y.
Biggs Boiler Works Co., Akron, Ohio.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Cole Mfg. Co., R. D., Newnan, Ga.
Downingtown Iron Works, Downingtown, Pa.
Hammond Iron Works, Warren, Pa.
Lombard Iron Works & Supply Co., Augusta, Ga.
McClintic-Marshall Co., Pittsburgh, Pa.
Mecklenburg Iron Works, Charlotte, N. C.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Seafie & Sons, Wm. B. Oakmont, Pa.
Schonfeld's Sons Co., J. S., Macon, Ga.
Titusville Iron Works Co., Titusville, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.
Westinghouse Traction Brake Co., Wilmerding, Pa.
- (Seamless Steel.)
Janney, Jr., Jos. A., Phila., Pa.
National Tube Co., Pittsburgh, Pa.
- (Storage, Oil, etc.)
Biggs Boiler Works, Akron, Ohio.
Birmingham Boiler & Engr. Co., Birmingham, Ala.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Downingtown Iron Works, Downingtown, Pa.
Hammond Iron Works, Warren, Pa.
Ingalls Iron Works Co., Birmingham, Ala.
Mecklenburg Iron Works, Charlotte, N. C.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Titusville Iron Works Co., Titusville, Pa.
- (Wood.)
Caldwell Co. Inc., W. E. Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Virginia Mch. & Well Co., Richmond, Va.
Woolford Wood Tank Mfg. Co., G., Paschall P. O., Philadelphia.
- (Wood Pickling.)
Woolford Wood Tank Mfg. Co., G., Paschall P. O., Philadelphia.
- TAPE (Insulating.)**
Okonite Co., New York, N. Y.
- (Measuring.)
Lufkin Rule Co., Saginaw, Mich.
- TAX SPECIALISTS.**
Ernst & Ernst, New York, N. Y.
Harrison, Wm. Henry, Washington, D. C.
Le Baron, E. T., Jacksonville, Fla.
- TELEPHONE SERVICE.**
American Telephone & Telegraph Co.
- TERRA COTTA (Ornamental.)**
Atlanta Terra Cotta Co., Atlanta, Ga.
- TEXTILE CHEMICALS.**
Grasselli Chemical Co., Inc., Birmingham, Ala.
- TILE (Cement Roofing.)**
American Cement Tile Mfg. Co., Pittsburgh, Pa.
- (Cork Composition.)
Congoleum-Nairn Inc., Kearny, N. J.
- (Cork Flooring.)
Congoleum-Nairn Inc., Kearny, N. J.
- (Floor.)
Hood Co., B. Mifflin, Daisy, Tenn.
- (Hollow Building.)
Cambria Clay Products Co., Blackfork, Ohio.
- (Roof.)
Hood Co., B. Mifflin, Daisy, Tenn.
- (Sewer.)
Lee Clay Products Co., Clearfield, Ky.
- TIMBER Fittings.**
Duplex Hanger Co., Cleveland, Ohio.
- (Creosoted.)
Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Carolina Wood Preserving Co., Charleston, S. C.
- TIME Recorders.**
Kaiser Klock Co., L. E., Baltimore, Md.
- TIN AND TERNE PLATES.**
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Granite City Steel Co., Granite City, Ill.
Youngstown Sheet & Tube Co., Youngstown, Ohio.
- TOBACCO MACHINERY.**
Ripley Foundry & Machine Co., Ripley, O.
- TOILET TISSUE.**
Victoria Paper Mills Co., Fulton, N. Y.
- TOOLS (Measuring.)**
Lufkin Rule Co., Saginaw, Mich.
- (Woodworking—Portable.)
Electric, Hand.
Wappat, Incorporated, Pittsburgh, Pa.
- TORCHES (Blow.)**
Wall Mfg. Supply Co., P., Pittsburgh, Pa.
- TOWERS (Electric Transmission.)**
American Bridge Co., New York, N. Y.
Bates Steel Corp., Walter, Gray, Ind.
Bessemer Galvanizing Works, Birmingham, Nashville Bridge Co., Nashville, Tenn.
- (Radio.)
Bessemer Galv. Wks., Birmingham, Ala.
- (Steel and Wood.)
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cole Mfg. Co., R. D., Newnan, Ga.
- TRACK (Portable or Permanent.)**
Sweet's Steel Co., Williamsport, Pa.
- TRACTORS (Industrial.)**
Atlas Car & Mfg. Co., The, Cleveland, O.
Caterpillar Tractor Co., San Leandro, Cal.
Clark Tractor Co., Battle Creek, Mich.
Cleveland Tractor Co., Cleveland, Ohio.
International Harvester Co., of America, Inc., Chicago, Ill.
- (Road.)
Caterpillar Tractor Co., San Leandro, Cal.
Cleveland Tractor Co., Cleveland, Ohio.
- (Attachments (Side Boom).)
W-K-M Co., Inc., Houston, Texas.
- TRAILERS (Four Wheel.)**
Electric Wheel Co., Quincy, Ill.
- (Heavy Duty.)
Electric Wheel Co., Quincy, Ill.
- (Industrial.)
Easton Car & Construction Co., Easton, Pa.
Electric Wheel Co., Quincy, Ill.
- (Pole.)
Electric Wheel Co., Quincy, Ill.
- TRAMWAYS (Aerial Wire Rope.)**
American Steel & Wire Co., Balto., Md.
Broderick & Bascom Rope Co., St. Louis.
Leschen & Sons Rope Co., A., St. Louis.
- TRANSFORMERS.**
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.
- (Used.)
Electric Service Co., Cincinnati, Ohio.
- TRANSMISSION TOWERS (Galvanized.)**
Bates Steel Corp., Walter, Gray, Ind.
Bessemer Galvanizing Works, Birmingham, McClintic-Marshall Co., Pittsburgh, Pa.
- TRENCH MACHINERY. See**
Excavators (Trench.)
- TRESTLES (Wooden.)**
Patent Scaffolding Co., Chicago, Ill.
- TRI-SODIUM PHOSPHATE.**
Grasselli Chemical Co., Inc., Birmingham, Ala.
- TROLLEY WHEELS (Self Oiling.)**
Moccasin Bushing Co., Chattanooga, Tenn.
- TRUCK CRANES.**
Universal Crane Co., Lorain, O.
- TRUCKS (Dry Kiln.)**
Moore Dry Kiln Co., Jacksonville, Fla.
- (Industrial.)
Atlas Car & Mfg. Co., The, Cleveland, O.
Lansing Co., Lansing, Mich.
Nutting Truck Co., Chicago, Ill.
- (Motor.)
International Harvester Co., of America, Inc., Chicago, Ill.
- (Platform, Freight, Mill, Factory, etc.)
American Pulley Co., Philadelphia, Pa.
- Clark Tractor Co., Battle Creek, Mich.
Electric Wheel Co., Quincy, Ill.
Nutting Truck Co., Chicago, Ill.
- (Steel Shop.)
Angle Steel Stool Co., Plainwell, Mich.
- TUBES (Boiler.) See**
Boiler Tubes.
- TUBING (Metal.)**
Boiler Tube Co., of America, Pittsburgh.
- (Seamless Steel.)
National Tube Co., Pittsburgh, Pa.
Timken Rolling Bearing Co., Canton, O.
- TURBINES (Hydraulic.)**
Cook, Inc., A. D., Lawrenceburg, Ind.
Davis Foundry & Mach. Works, Rome, Ga.
Lefell & Co., The, James, Springfield, O.
Smith Co., S. Morgan, York, Pa.
- (Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
DeLaval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.
- TURNBUCKLES.**
Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.
- TURNABLES.**
American Bridge Co., New York, N. Y.
Easton Car & Construction Co., Easton, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.
- (Portable for Motor Trucks.)
Blaw-Knox Co., Pittsburgh, Pa.
- UNIONS.**
Dart Mfg. Co., E. M., Providence, R. I.
- UNIT HEATERS.**
Grinnell Co., Inc., Providence, R. I.
Skinner Bros. Mfg. Co., St. Louis, Mo.
- VALVES.**
Jenkins Bros., New York, N. Y.
Ludlow Valve Mfg. Co., The, Troy, N. Y.
Lunkenheimer Co., The, Cincinnati, Ohio.
Merco Nordstrom Valve Co., San Francisco, Cal.
Mueller Co., Decatur, Ill.
Vost Brothers Mfg. Co., Louisville, Ky.
Vost Machine Co., Henry, Louisville, Ky.
Westinghouse Traction Brake Co., Wilmerding, Pa.
- (Acid Proof.)
Lunkenheimer Co., The, Cincinnati, O.
- (Gate.)
Ludlow Valve Mfg. Co., The, Troy, N. Y.
Lunkenheimer Co., The, Cincinnati, Ohio.
Wood & Co., R. D., Philadelphia, Pa.
- VENTILATING SYSTEMS.**
Skinner Bros. Mfg. Co., St. Louis, Mo.
Swartwout Co., Cleveland, Ohio.
- VENTILATORS (Roof.)**
Merchant & Evans Co., Philadelphia, Pa.
Milcor Steel Co., Milwaukee, Wis.
Robertson Co., H. H., Pittsburgh, Pa.
- (Rotary.)
Swartwout Co., Cleveland, Ohio.
- WADDING (Crepe, for package protection.)**
Kimberly Clark Corp., Chicago, Ill.
- WALL HANGERS.**
Duplex Hanger Co., Cleveland, Ohio.
- WARDROBES (Hygienic, School.)**
Wilson Corp., The J. G., New York.
- WATCHMAN'S PORTABLE CLOCKS.**
Davis-Paradis Watchman's Clock Corp., New York, N. Y.
Kaiser Klock Co., L. E., Balto., Md.
- WATERPROOFING (For Brick, Concrete, Granite.)**
Asphalt Products Co., Syracuse, N. Y.
Foster Co., Benjamin, Philadelphia, Pa.
Senneporn, Sons, Inc., L., New York.
- WATER Purification.**
Roberts Filter Mfg. Co., Darby (Phila.), Pa.
Seafie & Sons, Wm. B., Oakmont, Pa.
- (Softening Apparatus (Purifying).)
American Water Softener Co., Phila., Pa.
International Filter Co., Chicago, Ill.
- (Works Supplies and Appliances.)
Amer. Cast Iron Pipe Co., Birmingham.
Cast Iron Pipe Research Assn., Chicago.
- Cook, Inc., A. D., Lawrenceburg, Ind.
Giamorgan Pipe & Fdry. Co., Lynchburg, Va.
Leadite Co., The, Philadelphia, Pa.
Mueller Co., Decatur, Ill.
U. S. Pipe & Foundry Co., Burlington, N. J.
Wood & Co., R. D., Philadelphia, Pa.
- WELDING APPARATUS (Electric Arc.)**
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.
- WELL CONTRACTORS (Oil, Artesian, etc.)**
Virginia Machy. & Well Co., Richmond, Va.
- WHEELBARROWS.**
Lansing Co., Lansing, Mich.
Sterling Wheelbarrow Co., Milwaukee.
- WHEELS AND AXLES.**
Carnegie Steel Co., Pittsburgh, Pa.
- WINCHES.**
Saggen Derrick Co., Chicago, Ill.
Schultz & Son, A. L., Chicago, Ill.
- WINDOW Frames and Sash (Metal.)**
Bayley Co., The, William, Springfield, O.
Lupton's Sons Co., David, Phila., Pa.
- WINDOWS (Bronze Casement.)**
Michaels Art Bronze Co., Covington, Ky.
- (Steel Basement, Casement.)
Bayley Co., The, William, Springfield, O.
Detroit Steel Products Co., Detroit, Mich.
Lupton's Sons Co., David, Phila., Pa.
Milcor Steel Co., Milwaukee, Wis.
- (Steel Garage.)
Detroit Steel Products Co., Detroit, Mich.
Lupton's Sons Co., David, Phila., Pa.
- (Steel Pivoted, Screened.)
Bayley Co., William, Springfield, O.
- (Ventilating.)
Bayley Co., The, William, Springfield, O.
Detroit Steel Products Co., Detroit, Mich.
Lupton's Sons Co., David, Phila., Pa.
- WIRE (All Kinds.)**
American Steel & Wire Co., Chicago.
Roebbling's Sons Co., John A., Trenton, N. J.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
- (Barbed Wire, etc.)
American Steel & Wire Co., Balto., Md.
Gulf States Steel Co., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, Ohio.
- (Fence.)
Anchor Post Fence Co., Baltimore, Md.
Cyclone Fence Co., Waukegan, Ill.
Fage Fence Association, Chicago, Ill.
- (Flat and Round.)
American Steel & Wire Co., Balto., Md.
- (Galvanized and Annealed.)
American Steel & Wire Co., Balto., Md.
Gulf States Steel Co., Birmingham, Ala.
- (Telephone and Telegraph.)
American Steel & Wire Co., Balto., Md.
- (Welding.)
American Steel & Wire Co., Chicago, Ill.
Roebbling's Sons Co., John A., Trenton, N. J.
- (Cloth (Iron, Steel, Copper, Brass, etc.).)
Harrington & King Perf. Co., Chicago.
Ludlow Saylor Wire Co., The, St. Louis, Mo.
- (Goods.)
Cyclone Fence Co., Waukegan, Ill.
- (Netting.)
Ludlow Saylor Wire Co., The, St. Louis, Mo.
- (Rope (Transmission, Hoisting, Haulage).)
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis.
Leschen & Sons Rope Co., A., St. Louis.
Roebbling's Sons Co., John A., Trenton, N. J.
- (Rope Clips.)
American Steel & Wire Co., Balto., Md.
Broderick & Bascom Rope Co., St. Louis.
- WOOD (Preserved.)**
Delaware Wood Preserving Co., Phila.
- WOODWORKING MACHINERY.**
Wappat, Incorporated, Pittsburgh, Pa.
- ZINC CHLORIDE.**
Grasselli Chemical Co., Inc., Birmingham, Ala.
- ZINC META ARSENITE (Wood Preservative.)**
Curtin-Hove Corp., New York City.
Gulf States Creos. Co., Hattiesburg, Miss.



G-E CR9517 magnetic brake mounted to show operating position

Phantom view of G-E CR9517 magnetic brake. Note minimum adjustments and simple construction

New
and
Entirely
Different



the G-E Band-Type Magnetic Brake

Power to grip and hold—powerfully built—easily adjusted.

Low pressure—approximately 15 to 18 pounds per square inch for a 30-minute rating—minimizes wear on brake lining and wheel.

Coil terminals are secured to the magnet frame. Coil magnet—easily replaced without changing brake adjustment—is so mounted that terminals can be brought out either side of brake.

Brake bands interchangeable, top and bottom.

Balanced steel wheels can be raised vertically with top band thrown back.

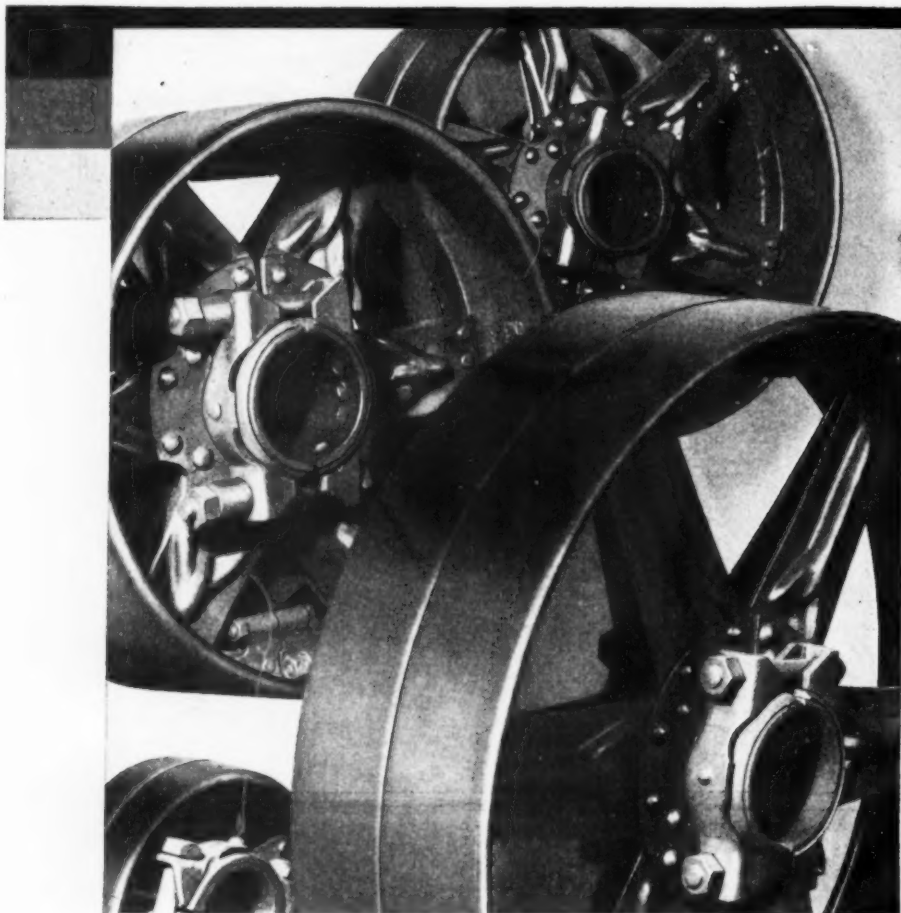
Coils are form-wound, vacuum-treated, and compounded in the magnet frame.

These are the outstanding features of the new G-E CR9517 d-c. band-type magnetic brakes. Write the nearest G-E office for descriptive bulletin GEA-1296 containing complete information.

301-59

JOIN US IN THE GENERAL ELECTRIC PROGRAM, BROADCAST EVERY SATURDAY EVENING ON A NATION-WIDE N.B.C. NETWORK

GENERAL  ELECTRIC
SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES



SPEEDING POWER ON ITS USEFUL WAY

In countless plants 7 million light, strong, durable AMERICAN Pressed Steel Pulleys are meeting modern pulley requirements for greater speed...for less dead load on shafting...for better traction, cutting power costs and permitting closer shaft centers...for perfect balance, reducing vibration...for greater strength to withstand new stresses and to eliminate costly interruptions in production schedules.

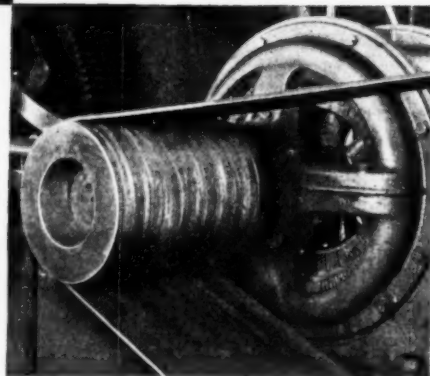
For a quarter of a century these pulleys have been known as the standard of quality wherever pulleys were used—for they have kept pace with every advance in the progress of

mechanical power transmission. Today, AMERICAN Pulleys are as modern as the high speed motors and machines they serve—scientifically correct for the particular duties they are to perform in the carefully studied transmission systems of this new industrial era.

Follow the example of industrial leaders, everywhere. Standardize on AMERICANs. They are easily available from coast to coast and in 28 foreign countries. Ask your dealer about them.

THE AMERICAN PULLEY CO.
4200 Wissahickon Ave., Philadelphia, Pa.

Pressed Steel: Shafting Pulleys, Hangers, Hand Trucks, Miscellaneous Stampings. Sprucolite (Compressed Spruce) Motor Pulleys, Machine Pulleys.



MOTOR PULLEYS THAT PULL

AMERICAN Sprucolite Motor Pulleys and Machine Pulleys are made from a specially developed and extremely durable synthetic material. They possess the highest coefficient of friction, and are considerably lighter in weight than wood, cast iron or paper pulleys.



Alphabetical Index of Advertisements

A		
Abendroth & Root Mfg. Co.	32	
Acme Road Machinery Co.	106	
Adam Electric Co., Frank	1	
Airmap Corp. of America	34	
Air-Tight Steel Tank Co.	33	
Akers, William	89	
Alabama Clay Products Co.	6	
Alabama Power Co.	42	
Albert & Davidson Pipe Corp.	95	
Albert Pipe Supply Co.	95	
Allen, Charles S.	46	
Allen-Sherman-Hoff Co.	1	
Allis-Chalmers Mfg. Co.	10	
Alpaugh & Sons, Chas. W.	35	
Alpha Portland Cement Corp.	1	
Aluminum Co. of America	1	
Ambler Asbestos Shingle & Sheathing Co.	1	
American Bridge Co.	38	
American Cast Iron Pipe Co.	32	
American Cement Tile Mfg. Co.	2	
American Cresosote Works	26	
American Cresosoting Co.	1	
American Elevator & Machine Co.	24	
American Gas Association	1	
American Institute of Steel Construction, Inc.	1	
American Kron Seal Co.	1	
American Limestone Co.	102	
American Manufacturing Co.	1	
American Pipe Bending Machine Co.	28	
American Pressed Steel Co.	106	
American Process Co.	104	
American Pulley Co.	120	
American Rolling Mill Co.	1	
American Sheet & Tin Plate Co.	1	
American Steel & Wire Co.	1	
American Steel Dredge Co.	102	
American Telephone & Telegraph Co.	1	
American Water Softener Co.	1	
Anchor Post Fence Co.	39	
Andrews Co., A. H.	26	
Angle-Blackford Co.	34	
Angle Steel Stool Co.	1	
Arkansas Natural Gas Corp.	1	
Armco Culvert Mfrs. Assn.	1	
Arundel Corporation	104	
Asphalt Products Company	1	
Atlanta & West Point R. R.	1	
Atlanta Terra Cotta Co.	25	
Atlantic Ice & Coal Co.	94-96	
Atlantic Bridge Co.	16	
Atlantic Cresosoting Co.	26	
Atlantic, Gulf & Pacific Co.	1	
Atlas Car and Manufacturing Co.	98	
Austin Machinery Corp.	1	
Austin-Western Road Machy. Co.	1	
Ayer & Lord Tie Co.	1	
B		
Babcock & Wilcox Co.	1	
Balling Co.	36	
Baltimore Commercial Bank	89	
Bank of Alabama	1	
Bank of New York & Trust Co.	1	
Bannon Pipe Co.	32	
Barber-Greene Co.	115	
Barrow-Agee Laboratories	35	
Barstow & Co., Inc., W. S.	21	
Bates Steel Corp., Walter	35	
Battley & Kipp	102	
Bay City Shovels, Inc.	102	
Bayley Co., Wm.	21	
Belmont Iron Works	16	
Benson Brass & Chandelier Works	1	
Bessemer Galvanizing Works	1	
Bethlehem Steel Co.	98	
Biggs Boiler Wks. Co.	32	
Biggs Engineering Co., W. E.	34	
Billingsley, James W.	35	
Binzwanger & Co.	109	
Birmingham Boiler & Engr. Co.	1	
Birmingham Galvanizing Co.	14	
Birmingham Rail & Loco. Co.	96	
Blair, Algernon	34	
Blaw-Knox Co.	1	
Bliss & Laughlin, Inc.	1	
Bliss Co., E. W.	13	
Blue Ridge Glass Co.	1	
Blystone Mfg. Co.	106	
Boiler Tube Co. of America	1	
Bond, Geo. Harwell	34	
Box 137	95	
Boxley & Co., W. W.	102	
Braden Steel Corp.	46	
Briggs & Turivas	1	
Bristol Steel & Iron Works, Inc.	16	
Broderick & Bascom Rope Co.	1	
Brooks-Seaton Corp.	27	
Brown Wood Preserving Co.	1	
Bucyrus-Erie Co.	102	
Buffalo-Springfield Roller Co.	106	
Butler Manufacturing Co.	1	
Byllesby Engineering & Management Corp.	35	
C		
Cabot, Inc., Samuel	1	
Cahill Co., W. S.	1	
Caldwell Co., W. E.	32	
Calligan & Co., A. H.	1	
Cambria Clay Products Co.	32	
Cameron Steam Pump Works, A. S. (Ingersoll-Rand Co.)	31	
Carborundum Co.	1	
Carnegie Steel Co.	1	
Carolina Steel & Iron Co.	16	
Carolina Wood Preserving Co.	1	
Cast Iron Pipe Research Assn.	1	
Caterpillar Tractor Co.	105	
Cattie & Bros., Joseph P.	14	
Cement-Gun Co.	26	
Cement Gun Construction Co.	109	
Central Foundry Co.	32	
Central Iron & Steel Co.	106	
Central of Georgia Rwy.	40	
Central Pipe & Supply Co.	95	
Central Power & Light Co.	1	
Chain Belt Co.	1	
Champion Bridge Co.	16	
Charleston Constructors, Inc.	35	
Charleston Dry Dock & Mch. Co.	6	
Charlton & Davis	34	
Charlotte Leather Belting Co.	1	
Chase Brass & Copper Co.	32	
Chase, William J. J.	34	
Chattanooga Boiler & Tank Co.	33	
Chicago Bridge & Iron Works	33	
Chicago Perforating Co.	104	
Chicago Pneumatic Tool Co.	1	
Christian Co., J. R.	97	
Clark Tractor Co.	10	
Classified Opportunities	93-94	
Cleveland Tractor Co.	1	
Clew & Sons, James B.	29	
Cohen, Chas. F.	94	
Cole Mfg. Co., R. D.	33	
Colonial Cresosoting Co.	1	
Combustion Engineering Corp.	1	
Conard & Busby	35	
Congoleum-Nairn Inc.	1	
Connors Steel Co.	1	
Consoer, Older & Quinlan	34	
Consolidated Products Co.	95	
Continental Gin Co.	6	
Converse & Co., J. B.	35	
Converse Bridge & Steel Co.	16	
Cook, Inc., A. D.	46	
Copper & Brass Research Assn.	1	
Cornell-Young Co.	36	
Corporation Service Co.	1	
Cowper Co., The John W.	35	
Crucible Steel Casting Co.	105	
Curtin-Howe Corp.	1	
Cutler Mail Chute Co.	24	
Cyclone Fence Co.	1	
D		
Dake Engine Co.	1	
Dame-Wolfe & Co.	36	
Dart Mfg. Co., E. M.	28	
Davis & Son, G. M.	32	
Davis Foundry & Machine Works	30	
Davis-Paradis Watchman's Clock Corp.	1	
Davison Chemical Co.	105	
Day Pulverizer Co.	102	
Dayton Safety Ladder Co.	1	
Dee Co., Wm. E.	1	
Deemer Steel Casting Co.	105	
DeKalb, Courtenay	36	
DeLaval Steam Turbine Co.	1	
Delaware Registration Trust Co.	1	
Delaware Wood Preserving Co.	26	
Delta Equipment Co.	98	
Detroit Steel Products Co.	1	
Diamond Chain & Mfg. Co.	1	
Dietrich Brothers	20	
Dixie Culvert & Metal Co.	1	
Dixie Culvert Mfrs. Assn.	1	
Dixie Electro-Plating Co.	36	
Dixon Crucible Co., Jos.	1	
Dow & Smith	35	
Downingtown Iron Works	1	
Draper, E. S.	34	
Dunning & Boschert Press Co.	1	
Duplex Hanger Co.	1	
DuPont de Nemours & Co., E. I.	100-101	
Durham Land Co.	97	
E		
Earle Gear & Machine Co.	109	
Easton Car & Constr. Co.	98	
Edelblute Co., T. H.	1	
Eichleay, Jr., Co., John	35	
Electric Bond & Share Co.	89	
Electric Service Co.	96	
Electric Storage Battery Co.	1	
Electric Wheel Co.	106	
Ellicott Machine Corp.	102	
Engineering Service Corp.	34	
Eppinger & Russell Co.	1	
Equipment Corp. of America	1	
Erdle Perforating Co.	104	
Erie Machine Shops	106	
Erie Pump & Engine Works	1	
Ernst & Ernst	1	
Eternit, Inc.	25	
Evans Elevator Equalizer Co.	1	
Excavating Equipment Dealers, Inc.	97	
F		
Fairbanks, Morse & Co.	1	
Fay, Spofford & Thorndike	35	
Fernholts Machinery Co.	14	
First & Merchants Nat'l Bank of Richmond	1	
Fiske-Carter Const. Co.	34	
Flood & Co., Walter H.	36	
Floyd & Lochridge	25	
Ford, Baron & Davis	35	
Fort Worth (Texas) Chamber of Commerce	40	
Foster Co., Benjamin	28	
Frank, M. K.	97	
Freeland, Roberts & Co.	34	
Fried & Co.	104	
Froehling & Robertson	36	
Fuller & McClintock	34	
Fuller Lehigh Co.	1	
G		
Galer Equipment Corp.	1	
Galveston, Texas, City of	1	
Galveston Wharf Co.	1	
Gardner & Howe	34	
Garraway & Co., S. G.	89	
Gay & Co., W. O.	19	
General Electric Co.	110	
General Electric Vapor Lamp Co.	1	
General Machine Works	14	
Georgia Cresosoting Co.	1	
Georgia Iron Works	32	
Georgia Marble Co.	28	
Georgia Power Co.	43	
Glamorgan Pipe & Fdry. Co.	32	
Goldens Foundry & Machine Co.	12	
Granite City Steel Co.	1	
Graselli Chemical Co.	1	
Greenpoint Iron & Pipe Co.	95	
Gregory Electric Co.	95	
Greiner & Co., J. E.	34	
Gridley Constr. Co., Lee A.	34	
Grinnell Co., Inc.	1	
Gulf Refining Co.	14	
Gulf States Cresosoting Co.	26	
Gulf States Steel Co.	1	
Gunite Concrete & Constr. Co.	1	
Gunite Construction Co.	1	
H		
Haas Pattern Co., A. W.	14	
Hammond Iron Works	44	
Hanchett Bond Co.	6	
Harbison-Walker Refractories Co.	6	
Hardaway Contracting Co.	35	
Harnischfeger Corp.	10-19	
Harrington Co.	10	
Harrington & King Perforating Co.	1	
Harrison, Wm. Henry	35	
Harrub Engr. Co., C. N.	34	
Harza Engineering Co.	34	
Hayward Co.	102	
Heath Co., J. S.	1	
Hedges Walsh Weldner Co.	6	
Hedrick, Ira G.	34	
Heiss Hotel System	109	
Hendrick Mfg. Co.	104	
Hercules Powder Co.	1	
Herfuth Engine & Machy. Corp.	95	
Herty, Chas. H.	34	
Hewitt-Phelps Mehry, Inc.	97	
Hill & Griffith Co.	1	
Hills Co., George B.	34	
Hinde & Dauch Paper Co.	1	
Hires Turner Glass Co.	109	
Hollowell, Gorham & Co.	36	
Holt Hardwood Co.	26	
Honhorst Co., Jos.	1	
Mood Co., B. Miffin	28	
Hoosier Engineering Co.	35	
Hornbuckle Contracting Co.	34	
Hough Shade Corporation	1	
Howell Electric Motors Co.	10	
Howerton Engineering Co.	34	
Huber Mfg. Co.	106	
Hudson Pipe & Supply Co.	1	
Huey, S. E.	34	
Hunt Co., Robert W.	36	
Hunt's Sons Co., M. J.	95	
Hyatt Roller Bearing Co.	1	
I		
Industrial Brownhoist Corp.	103	
Industrial Lumber Co.	26	
Ingalls Iron Works Co.	16	
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works)	31	
International Correspondence School	1	
International Filter Co.	1	
International Harvester Co. of America	1	
Invicta Engineering Co.	34	
Irving Iron Works Co.	21	
I. T. E. Circuit Breaker Co.	1	
J		
Jacksonville, Fla., City Commission	1	
Jaeger Machine Co.	36	
Janney, Jr., Jos. A.	33	
Jenkins Bros.	1	
Jennings & Co., Floyd	35	
Johnson & Hoehler	97	
K		
Kaiser Klock Co., L. E.	1	
Kansas City Bridge Co.	34	
Kerlow Steel Flooring Co.	21	
Kiesler Co., Jos. F.	102	
Kimberly-Clark Corp.	1	
Kinnear Manufacturing Co.	20	
Kirby Lumber Co.	1	
Knowles, Morris, Inc.	34	
Knoxville Iron Co.	1	
Koppel Industrial Car & Equip. Co.	98	
L		
Lacey Co., James D.	34	
Lansing Co.	102	
Law & Co., A. M.	1	
Layne & Bowler, Inc.	30	
Leafield Co.	46-87	
Le Baron, E. T.	35	
Lee Clay Products Co.	1	
Lee Trailer & Body Co., Inc.	1	
Lee, William S.	34	
Lefel & Co., James	1	
Lehigh Portland Cement Co.	1	
Leschen & Sons Rope Co., A.	46	
Levis & Co., Henry	1	
Lidgerwood Mfg. Co.	98	
Light Manufacturing & Foundry Co.	1	
Lindsley, Claude H.	34	
Lockwood Greene, Engrs., Inc.	36	
Lombard Iron Works & Supply Co.	6	
Louisiana Corr. Culvert Co.	1	
Louisville Cement Co.	1	

Ludlow Engineers.....
 Ludlow-Saylor Wire Co.....
 Ludlow Valve Mfg. Co.....
 Lufkin Rule Co.....
 Luftwiler Pumping Engine Co.....
 Lunkenheimer Co.....
 Lupton's Sons Co., David.....

M

MacElwee & Crandall, Inc.....
 Macon Concrete Roller Co.....
 Mahon Co., R. C.....
 Main, Chas. T.....
 Manhattan Perf. Metal Co.....
 Manistee Iron Works Co.....
 Marine Metal & Supply Co.....
 Maryland Pipe & Steel Corp.....
 Maryland Trust Co.....
 McClintic-Marshall Co.....
 McCrary Co., J. B.....
 McEverlast, Inc.....
 McLanahan and Stone Mch. Co.....
 Mecklenburg Iron Works.....
 Mees & Mees.....
 Meigs, Bassett & Slaughter.....
 Mercantile Trust Co.....
 Merchant & Evans Co.....
 Merco Nordstrom Valve Co.....
 Michaels Art Bronze Co.....
 Milburn, Heister & Co.....
 Milcor Steel Co.....
 Millner Co.....
 Milwaukee Electric Crane & Hoist Corp.....
 Missouri-Kansas-Texas Lines.....
 Missouri Pacific Lines.....
 Moccasin Bushing Co.....
 Model Land Co. (Flazler System).....
 Moeschl-Edwards Corrugating Co.....
 Monaghan Mfg. Corp.....
 Moore Dry Kiln Co.....
 Morgan Construction Co.....
 Morris Machine Works.....
 Morse Chain Co.....
 Mott Core Drilling Co.....
 Mountain States Steel Foundries.....
 Moyer Co., Tilghman.....
 Mueller Co.....
 Mullergren, Arthur L.....
 Mundt & Sons, Chas.....
 Mundy Hoisting Engine Co., J. S.....
 Myers & Bro. Co., F. E.....

N

Nashville Bridge Co.....
 Nashville Hardwood Flooring Co.....
 Nashville Industrial Corp.....
 National Blow Pipe & Mfg. Co., Ltd.....
 National Cast Iron Pipe Co.....
 National Equipment Corp.....
 National Paving Brick Mfrs. Asso.....
 National Traffic Guard Co.....
 National Tube Co.....
 Newport News Shipbuilding & Dry Dock Co.....
 Norfolk & Western Railway.....
 North American Refractories Co.....
 Northwest Engineering Co.....
 Novo Engine Co.....
 Nussbaum & Co., V. M.....
 Nutting Truck Co.....
 Nuveen & Co., John.....

O

O'Brien Mehry, Co., The.....
 Ohio Power Shovel Co.....
 Oil City Boiler Works.....
 O. K. Clutch & Machinery Co.....
 Okonite Co.....
 Old Dominion Box Co., Inc.....
 Owen Bucket Co., The.....
 Owensboro Sewer Pipe Co.....

P

Pacific Flush-Tank Co.....
 Page Fence Association.....
 Patent Scaffolding Co.....
 Patterson Co., W. W.....
 Pennsylvania Drilling Co.....
 Perry, Buxton, Doane Co.....
 Phoenix Iron Co., The.....
 Platt, Wm. M.....
 Picard Laboratories, The.....
 Pipe Railing Constr. Co.....
 Pittsburgh-Des Moines Steel Co.....
 Pittsburgh Piping & Equip. Co.....
 Pittsburgh Testing Laboratory.....
 Platt Iron Works.....
 Poe Piping & Heating Co.....
 Porter Co., H. K.....
 Portland Cement Ass'n.....
 Power Piping Co.....
 Preacher & Co., Inc., G. Lloyd.....
 Progressive Mfg. Co., The.....
 Provident Savings Bank & Trust Co.....

Q

Quincy Compressor Co.....
 Quinn Wire & Iron Works.....

R

Randle Mehry, Co., The.....
 Raymond Bros Impact Pulv. Co.....
 Raymond Mfg. Co.....
 Reading Iron Co.....
 Rees, S. P.....
 Republic Rubber Co.....
 Republic Steel Corp.....
 Reule Deut.....
 Richards-Wilcox Mfg. Co.....
 Richmond Structural Steel Co.....
 Riddell Co., W. A.....
 Ripley Fdry. & Machine Co.....
 Roanoke Iron & Bridge Works.....
 Robert & Co.....
 Roberts Filter Mfg. Co.....
 Robertson Co., H. H.....
 Robinson & Orr.....
 Rockford Power Machinery Co.....
 Roebing's Sons Co., John A.....
 Rowan, W. E.....
 Rundle-Spence Mfg. Co.....
 Russell, Burdall & Ward Bolt & Nut Co.....
 Rust Engineering Co.....
 Ryerson & Sons, Inc., Jos. T.....

S

Salem Foundry & Machine Works.....
 Sanderson & Porter.....
 Saagen Derrick Co.....
 Sauerman Bros., Inc.....
 Savannah Creosoting Co.....
 Saville, Inc., Allen J.....
 Scaife & Sons Co., Wm. B.....
 Schofield's Sons Co., J. S.....
 Schultz & Son, A. L.....
 Seofield Engineering Co.....
 Sebastian Lath Co.....
 Service Caster & Truck Co.....
 Shaw Co., B. Russell.....
 Shore-Line Builders, Inc.....
 Simmons Inc. & Asso., B. Stanley.....
 Simplicity System Co.....
 Sirrine & Co., J. E.....
 Skinner Bros. Mfg. Co., Inc.....
 Sloan-Sheffield Steel & Iron Co.....
 Smith, Elroy G.....
 Smith L. R.....
 Smith Co., S. Morgan.....
 Smith & Son Co., Oscar T.....
 Smith & Co., W. M.....
 Snare Corp., Frederick.....
 Sneed Architectural Iron Works.....
 Sonneborn Sons, Inc., L.....
 Southern Drilling Co.....
 Southern Engineering Co.....
 Southern Hotel, The.....
 Southern Iron & Equip. Co.....
 Southern Paving Constr. Co.....
 Southern Spindle & Flyer Co.....
 Southwestern Laboratories.....
 Spoon & Lewis.....
 Sprague & Henwood, Inc.....
 Spring, Charles Herbert.....
 Steel and Leiby.....
 Steele & Sons, J. C.....
 Sterling Engine Co.....
 Sterling Wheelbarrow Co.....
 Stewart & Co., Paul.....
 Stewart Iron Works.....
 Stillman and Van Sien, Inc.....
 Stone & Webster Engineering Corp.....
 Stonhard Co.....
 Strand & Co., N. A.....
 Street Bros. Machine Works.....
 Stuebner Iron Works, Inc., G. L.....
 Sullivan Machinery Co.....
 Swartwout Co.....
 Sweet's Steel Co.....
 Swenson Evaporator Co.....

T

Table of Contents.....
 Taylor-Colquitt Co.....
 Taylor Forge & Pipe Works.....
 Taylor Sons Co., Chas.....
 Taylor, Wilson & Co., Inc.....
 Tennessee Central Railway.....
 Tennessee Coal, Iron & Railroad Co.....
 Tennessee Eastman Corp.....
 Tennessee Metal Culvert Co.....
 Texas Power & Light Co.....
 Textile Hall Corp.....
 Thew Shovel Co., The.....
 Thompson & Bros., T. C.....
 Timken Roller Bearing Co.....
 Titusville Iron Works Co.....

Trackson Co.....
 Tucker & Laxton.....
 Turner, C. A. P.....

U

Union Steam Pump Co.....
 Union Tank & Pipe Co.....
 U. S. Pipe & Foundry Co.....
 Universal Crane Co., The.....
 Universal Crusher Co.....
 Universal Power Shovel Co.....

V

Veeder-Root Inc.....
 Victoria Paper Mills Co.....
 Viking Pump Co.....
 Virginia Bridge & Iron Co.....
 Virginia Mehry & Well Co.....
 Vogt Bros. Mfg. Co.....
 Vogt Machine Co., Henry.....

W

Wadleigh & Bailey.....
 Wales Wood Preserving Co.....
 Walker Electrical Co.....
 Wall Mfg. Supply Co., P.....
 Warner Service Co.....
 Webb Electric Co.....
 Weber Co., F.....
 Webster & Weller Mfg. Companies.....
 Weller & Co.....
 Western Electric Co.....
 Western Metal Mfg. Co.....
 Westinghouse Electric & Mfg. Co.....
 Westinghouse Traction Brake Co.....
 Wheeler, Walter H.....
 Whitaker Paper Co.....
 Whitcomb Co., George D.....
 White Co., Gilbert C.....
 White Engineering Corp., The J. G.....
 Whiting Corp.....
 Whitney Metal Tool Co.....
 Widmer Engineering Co.....
 Wiedeman and Singleton, Inc.....
 Wiley & Co., Inc.....
 Wiley & Wilson.....
 Williamson, Lee H.....
 Wilson Corp., The J. G.....
 W-K-M Co., Inc.....
 Wood & Co., R. D.....
 Woodhouse Chain Works.....
 Wood's Sons Co., T. B.....
 Woodstock Slag Corp.....
 Woolford Wood Tank Mfg. Co., G.....

Y

Yoder Co., The.....
 Young & Seiden Co.....
 Youngtown Sheet & Tube Co.....

Z

Zelnieker in St. Louis.....

Advs. marked * not in this issue.
 Advs. marked † appear in first issue of month.
 Advs. marked * appear every other week.

Classified }
 Opportunities } Pages 93-94

Proposal }
 Advertisements } Pages 91 to 93

Resale }
 Department } Pages 94 to 97 (2-30)

A DAILY LIST OF SOUTHERN BUSINESS OPPORTUNITIES

The DAILY CONSTRUCTION BULLETIN issued each business day by Manufacturers Record gives advance, reliable news covering whatever is being planned or started throughout the sixteen Southern states from Maryland to Texas in the way of industrial development, new construction work, building operations, engineering projects, public improvement work of all kinds, the organization of new firms for every purpose and other important phases of Southern development.

Every firm interested in the great Southern market, will find this service of practical business value in keeping in close touch with sales opportunities.

Sample copies, subscription and advertising rates upon request.

TENNESSEE TIE PLATES



-for Superior Service

TENNESSEE High Carbon Hot Worked Tie Plates represent the highest standards of tie plate excellence. Being of rail steel carbon, they endure with the rail and their method of manufacture, which includes an annealing process, so toughens them that breakage is reduced to a negligible minimum. They present a remarkable resistance to corrosion . . . a fact which has been amply demonstrated by tests under various service conditions over a period of years. These plates are standard with many of the largest trunk lines in the country and their continued purchase year after year is convincing evidence of their superior quality and design, and that they have stood the test of service.



Tennessee Coal, Iron & Railroad Company

General Offices: Brown-Marx Building, Birmingham, Ala.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

AMERICAN BRIDGE COMPANY

AMERICAN SHEET AND TIN PLATE COMPANY

AMERICAN STEEL AND WIRE COMPANY

Pac. Coast Distributors—United States Steel Products Co. Columbia Dept., San Francisco, Los Angeles, Portland, Seattle, Honolulu. Export Distributors—United States Steel Products Co., New York City

CARNEGIE STEEL COMPANY

CYCLONE FENCE COMPANY

FEDERAL SHIPBUILDING AND DRY DOCK COMPANY

PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES:

ILLINOIS STEEL COMPANY

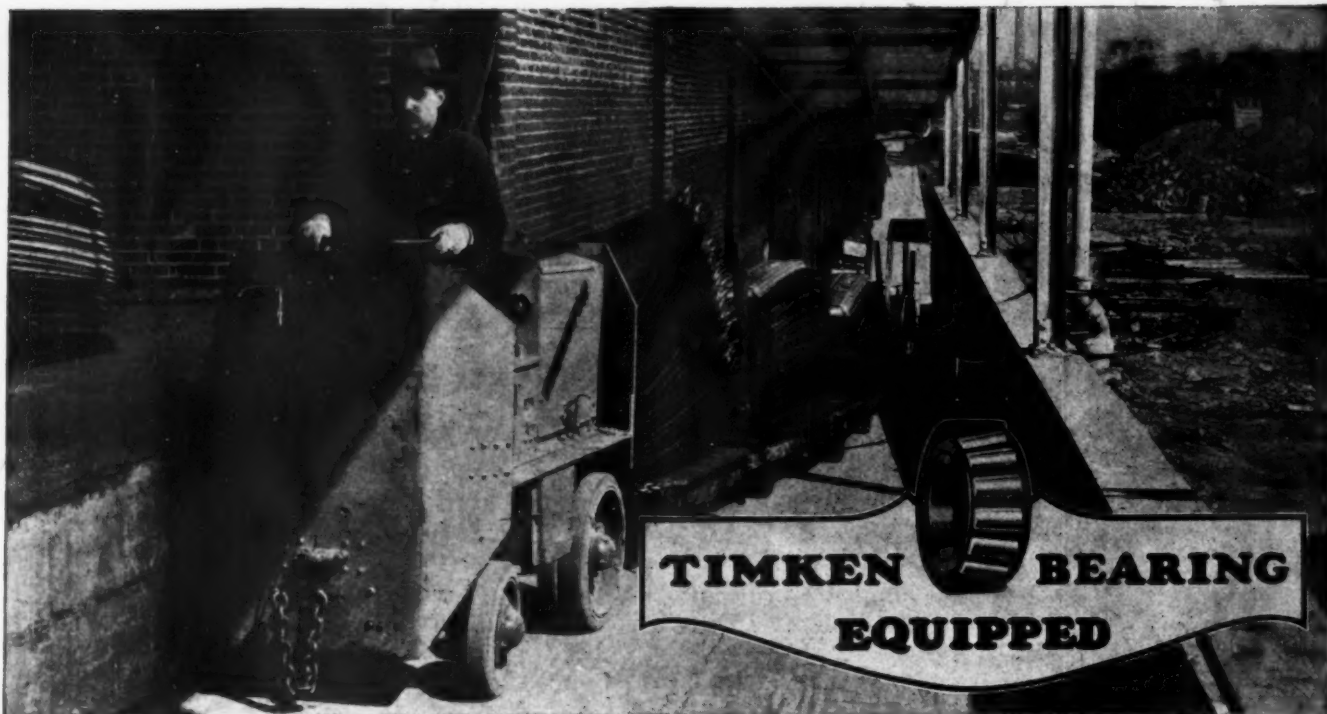
MINNESOTA STEEL COMPANY

NATIONAL TUBE COMPANY

THE LORAIN STEEL COMPANY

TENNESSEE COAL, IRON & R. R. COMPANY

UNIVERSAL ATLAS CEMENT COMPANY



The Towmotor Is Timken Bearing Equipped

The efficiency of a material handling system is dependent to a large extent on the proper selection of equipment. And, in making such selection, the type of bearings used in the mobile units should be given thorough consideration—not every bearing can stand the gaff—and an epidemic of bearing trouble or failures can do more to cripple a system than any other one thing.

An understanding of this fact led The Towmotor Company, of Cleveland, to equip its "Towmotor" gasoline engine-driven tractors with Timken Bearings in wheels, and on both ends of the pinion shaft and differential—the vital points. No amount of banging over rough surfaces, car tracks or poor pavement can produce wobbling wheels or worn axles.

In short, the performance of the trucks is guarded by Timken tapered construction, Timken positively aligned rolls and Timken-made steel. This same combination bestows the additional benefit of lower upkeep and lubrication costs—in fact lower operating expense generally.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

